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Observations
ON
THE USE OF RADON SEEDS IN THE TREATMENT OF CARCINOMA.

BY
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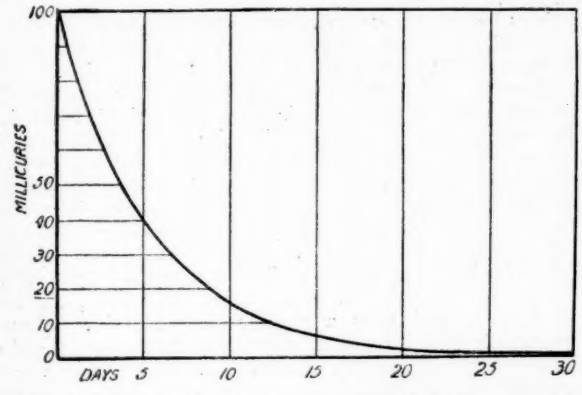
THE use of radium emanation in the form of seeds presents very considerable advantages in practice, and for nearly two years I have adopted it whenever possible, to the exclusion of other methods. In the course of that time I have developed certain modifications in technique which I have found advantageous, and although it is obvious that observations on cases treated over so short a period can only be of a tentative nature, I feel that they may not be devoid of interest.

Radon, or radium emanation, is a heavy gas of atomic weight 222, and it is formed by the decay of radium at an absolutely constant rate, which is independent of the physical condition of the radium, its solution, temperature, or pressure. Radon itself decays, but by the end of a month, if undisturbed, the radium and its emanation have virtually reached a state of equilibrium, when the production of radon is balanced by its decay and no further accumulation can take place. The amount of radon in equilibrium with one gram of radium is defined as one curie, and the volume of this very potent source of energy, the physical equivalent of 1,000 milligrams of radium, is only 0.6 of a cubic millimetre. It will thus be seen that we have here the means of packing an extremely powerful source of radiation into a very small compass.

From a surgical standpoint the radiation produced by radon is identical with that of radium, and indeed it is only from its accumulated store of radon that radium itself derives its power. Stripped of its emanation radium is for the moment entirely inert. There is, however, this very important distinction: that radium, giving off a



constant stream of radon gas, furnishes through this a constant and unvarying source of radiation; but radon, separated from its parent, steadily decays. Commencing with 100 millicuries of radon, we have left at the end of 3.82 days only 50 millicuries, in 9 days only 20, and at the end of a month practically the whole has gone. If, then, we use radon we must recognize that we are using a diminishing source, and make a corresponding allowance in the amount we apply.

This steady decay in power might be a fatal objection to the use of radon in surgery, but this is not in fact the case. All the evidence at present available goes to show that the effect produced upon a tumour is proportional to the total energy delivered, and that it is a matter of apparent indifference within certain limits whether this energy is produced slowly or rapidly, or whether its rate of production is constant or diminishing. It may, indeed, eventually prove that a powerful attack gradually withdrawn is more effective than a continuous bombardment at constant pressure.

It is usual to collect the radon in fine glass capillaries, but these must be screened by metal sheaths to cut off beta rays, which have no selective action on the cells of carcinoma and produce a general local necrosis of the tissues. The most effective screen is platinum, and with a platinum sheath whose wall is 0.3 mm. in thickness, all but a very small fraction of the beta rays are absorbed. I have found, however, that with such small amounts of radon as are used in seeds—usually from 1 to 2 millicuries—silver of the same thickness forms a perfectly satisfactory screen at a fraction of the cost, whilst it is an old observation that silver, owing to its slight antiseptic properties, is better tolerated in the tissues if left in permanently. The only exception is in the case of a growth close to a mucous or cutaneous surface, and here platinum should be used, as these surfaces are peculiarly sensitive to beta rays. The seeds may be attached to fine silk threads to be removed, but personally I only adopt this course in such special regions as the eyelids. In most regions the seeds may be left in permanently without any ill effect. The seeds I use are of one standard size, 5 mm. in length and 1.1 mm. in diameter. The wall is 0.3 mm. in thickness, so that a lumen is left 0.5 mm. in diameter, allowing ample room for the glass capillary. The seeds contain 1, 1.5, or 2 millicuries of radon, and they may be inserted in large numbers. Thus for a breast case 50 × 2 mc. seeds would be used, unless the patient were very stout or very thin, or the tumour exceptionally large, in which case the number or strength of the seeds might be modified. In a tongue one might use 10 × 1.5 mc. (preferably platinum), but a similar or larger quantity might be required for secondary glands in the neck. In the oesophagus I should use 12 × 1.5 mc. seeds in an ordinary case; in the rectum perhaps 30 × 2 mc.

These examples will serve to show the adaptability of seeds to various conditions and the flexibility of these small standard units to meet varying requirements as to dosage. In general, the aim in view is to produce a nearly uniform radiation of the region under treatment by as accurate a "random" distribution as it is possible to obtain. It is obvious that the smaller the unit the more easy will it be to obtain a true "random" distribution. In such a distribution it is obvious that the effects of crossfire will be important, but it is not usually realized how considerable this effect may be.

It is a generally accepted standard of dosage that one millicurie of radon during its decay will produce a gamma radiation sufficient to destroy all carcinoma cells within a distance of 0.5 cm. This is, of course, a very rough estimate, for no account is taken of the considerable variation in the sensitivity of various types of cancer. Taking it, however, as a rough basis of calculation, it would suggest that the correct dose would be 1 millicurie for each sphere of tissue 1 centimetre in diameter, and that a tumour 8 cm. in diameter would require 512 millicuries, since its volume is 512 times that of the unit sphere. Let us see how this estimate is affected by crossfire.

Let us represent the density of radiation at any point P by the letter R, taking as unity the density of radiation produced by 1 mg. of radium at a distance of 0.5 cm. Suppose the space around P to be filled by radium at a uniform density δ, so that every cubic centimetre of space contains δ milligrams of radium.

Consider a spherical shell described about P as centre, of radius r and thickness dr. The area of this shell is $4\pi r^2$, and its volume $4\pi r^2.dr$, so that in this shell are contained $4\pi r^2.dr.\delta$ milligrams of radium, all at a distance r from P. The density of radiation dR at the point P due to the spherical shell is proportional to this and to the inverse square of the distance, and we therefore have

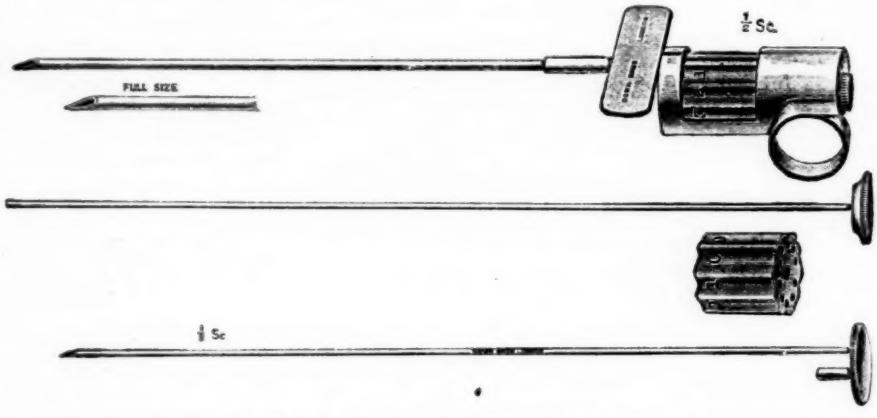
$$d\mathrm{R} = 4\pi r^2.dr.\delta \times \frac{1}{4r^2}$$

since the radiation of 1 mg. at a distance of 0.5 cm. is taken as unity. Thus $d\mathrm{R} = \pi\delta.\,dr$, and hence on integration we have $\mathrm{R} = \pi.\delta.r$.

In the case, then, of a spherical tumour 4 cm. in radius the density of radium required to produce unit radiation at the centre is given by $\delta = \frac{1}{4\pi}$. The total amount of radium required is therefore $\frac{1}{4\pi} \times \frac{4}{3}\pi \times 4^3$, or 21.3 mg. If we are using radon the amount required is 21.3 mc.

The contrast between this and the original estimate of 512 is a striking example of the remarkable effects of crossfire. It is, of course, true that the effect is greatest at the centre, that we have taken no account of absorption, and that such a distribution is unattainable in practice. The argument is, however, perfectly sound in demonstrating the value of an even distribution and the enormous increase in effective radiation which results, and incidentally it provides a substantial reason for the use of seeds by which an even distribution can most readily be obtained.

The seeds are introduced by means of a fine cannula 15 cm. in length and provided with a breech at the proximal end by which the seeds may be introduced. The seed is pushed down the cannula by means of a plunger, and is extruded at the distal end. The cannula is now withdrawn a short distance, say, 2 cm., and another seed is introduced. In this way a linear distribution of the seeds can be made with great accuracy and with no further trauma than is involved in the first introduction of the cannula. Further parallel rows of seeds can be similarly introduced, or several rows may be arranged to radiate from one puncture. The actual number of punctures in the skin required is very small, and we have usually found that for the breast six punctures will be ample, whilst for a full infiltration of the pelvis for a carcinoma of the rectum two punctures in the perineum may suffice. The resulting absolute elimination of sepsis is no small advantage of the method.



The best results are undoubtedly obtained by the introduction of large numbers of seeds, so that the total amount of radon is distributed as evenly as possible. The introduction of fifty or sixty seeds down a simple cannula is a tedious process, and I have therefore devised a magazine introducer, with a detachable magazine carrying ten seeds. The introducer is held in the left hand, and the magazine is rotated by the thumb, whilst the plunger is pushed home with the right hand. The saving of time is considerable, but perhaps even more important is the gain in precision of distribution of the seeds.

In the oesophagus this method is not applicable, and a special instrument is required. This takes the form of a long wire carrying a fine tube laterally at the distal end. A parallel wire running in guides can be pushed through this tube as a plunger. A seed is introduced into the *distal* end of the tube, which is bevelled off to a blunt needle point, and is fixed there with a little vaseline. The introducer is passed down the oesophagoscope under full visual control, and is advanced directly into the substance of the growth, the plunger is pushed home, and the seed deposited.

The Use of Seeds in Special Regions.

The application of these general principles to tumours in various regions involves in each case special considerations, and we propose to illustrate these by discussing in turn the treatment of tumours in the tongue, the breast, the rectum, and the oesophagus.

The Tongue.

The tongue is particularly adapted to the use of seeds, since their introduction is such a simple matter and their removal is quite unnecessary, whilst the patient is saved from the annoyance of the threads which must be used to secure radium needles. As in the case of all tumours, an endeavour is made to infiltrate the growing edge of the tumour with a uniform barrier of seeds. The definition of this growing edge is the most difficult part of the problem, and can only be judged after considerable experience. In this surface of growth the seeds are deposited so as to lie about 1 cm. apart, and a few additional seeds are then introduced into the tumour itself superficially to the deep growing surface. The total amount of radon used and the number of the seeds will, of course, vary with the nature of the case, but in an average case from ten to sixteen 1.5 mc. seeds will be required. They should be screened with platinum, as it is of importance that the mucous membrane of the tongue itself and of the palate should be absolutely protected from the action of beta rays.

The actual introduction of the seeds is a simple matter. Even in tumours situated at the base of the tongue it is quite easy to guide the cannula by means of a finger placed upon the ulcerated surface, and to judge of the depth at which it lies within the substance of the tongue. The needle is introduced through any convenient site, whether from the dorsal surface or from beneath the tongue, whilst in growths which extend on to the floor of the mouth the seeds may even be introduced with advantage from the neck beneath the jaw. Uniformity of arrangement so as to obtain a uniform crossfire is the chief object to be aimed at, and one should not allow oneself to be tempted to concentrate groups of seeds in the substance of the tumour where they will merely have a destructive action and produce a slough. I feel convinced that many of our failures are due to a too localized distribution of radium, and that some, at least, might have been converted into successes if a primary layer of seeds had been distributed far beyond the apparent region of the growth and not within its margins.

The course of events to be expected in a successful case is somewhat as follows. Within forty-eight hours it will be noted that the induration is diminishing, and in a week it has almost disappeared, whilst the growth is definitely smaller. At the end of two weeks the growth itself, and sometimes the adjoining mucosa, is covered by a smooth white layer of lymph, absolutely characteristic of a successful reaction. Beneath this the epithelium spreads in from the margins, and at the end of three weeks the growth has disappeared completely, the surface is healed, and only a pucker may remain. Where the growth is very large the process may take longer, and some deformity may result, but it is never in any way comparable with that produced by any form of operative removal.

The cervical lymphatic glands form one of the most difficult problems in carcinoma of the buccal cavity. It has long been recognized that in carcinoma of the tongue recurrence in the cervical lymphatics is almost invariable unless these have been removed, even where no local recurrence has taken place, and it is quite commonly bilateral. We have no doubt at all that at the present day the proper treatment of a primary carcinoma in the buccal cavity is irradiation; we cannot, however, speak with the same confidence of the cervical glands, and it still remains a question whether these should be dissected out completely, or whether we should depend on irradiation, or whether complete dissection should be followed by surface irradiation.

The method we are at present adopting is to treat the glands in precisely the same way as the primary growth, infiltrating the whole of the cervical region on the affected side with seeds, and following this up if necessary with a similar irradiation of the opposite side of the neck. In almost every case where the glands were already enlarged

this has been followed by a rapid diminution in their size, or even by total disappearance, and the fact that recurrence has in some instances occurred in more distant groups does not invalidate the local effectiveness of the seeds. It rather tends to show that the seeds must be distributed on a much wider scale, or that their action should be backed up by the more diffuse form of radiation which can be obtained from a collar.

The Breast.

The breast is a site so easily accessible for the introduction of needles that it might be thought that seeds presented few advantages. This is, however, far from being the case. The seeds can be introduced through a few minute punctures, not more than six being required in even the most extensive case. With the introducer which I have described their distribution can be controlled with mathematical precision, and *x*-ray photographs have convinced me that they do not wander from their site in any reasonable time. The punctures through which they are introduced heal almost immediatetly, so that there is no possibility of sepsis to complicate the treatment, whilst the patient is saved from the considerable annoyance caused by threads and the removal of needles.

The seeds are introduced according to the very satisfactory plan worked out by Gask and Keynes for the introduction of radium needles. The region just beyond the growing edge of the actual tumour itself is infiltrated with long columns of seeds, perhaps five rows with five seeds in each row, and above this into the base of the tumour itself further rows of seeds are inserted at right angles to the original set. Thus, the first layer of seeds will probably lie in the pectoral fascia, while the second lies in the substance of the tumour, assuming that the latter is of considerable dimensions. The cannula is now introduced through a puncture in the axilla and passed up beneath the pectoral muscles along the axillary vein, until it can be felt just below the middle of the clavicle. A long line of seven or eight seeds is now deposited, and this line is duplicated by another at a somewhat lower level, which really lies, for the most part, in the pectoralis major. Through the same puncture a line of seeds can be introduced along the axillary border of the pectoralis minor and upon the surface of the serratus magnus just behind this. Finally separate seeds are introduced, one in each of the intercostal spaces just outside the sternum, and two into the sheath of the rectus.

Although this is the general arrangement of the seeds, it may have to be modified to suit special circumstances. On occasions I have had to deal with tumours so large that I felt obliged to concentrate the whole of the seeds upon the tumour itself, leaving the lymphatic infiltration to a later date. One has to remember that the exposure of a patient to too large a dose may have serious constitutional results.

The Oesophagus.

The treatment of carcinoma of the oesophagus by means of radium presents very considerable difficulties. There is the difficulty of obtaining access to the tumour, secondly of forming any estimate of its dimensions, and thirdly of introducing radium. The last difficulty is to a large extent overcome by the use of seeds, whilst access to the upper end of the tumour can be obtained fairly readily by a properly designed oesophagoscope. Some idea of the length of the tumour can be formed from a radiogram after the swallowing of a bismuth emulsion, but it must be admitted that it is impossible to form any but a very vague idea of the extent of the growth. It has been suggested that freer access and more complete information would be gained by thoracotomy, but few of the patients with this disease are in a condition for such a formidable procedure, whilst there is so far no evidence to show that the results would be at all improved by its use.

My present method of procedure is as follows. Using the largest possible tube of my own oesophagoscope with proximal illumination, an excellent view of the upper end of the growth can be obtained. By means of a special introducer the seeds are passed down the lumen of the tube and implanted in the growth under the full control of vision.

The introducer consists of a short cannula carried at the end of a long wire, with a plunger which can be operated from the proximal end. Each seed is placed separately into the distal end of the introducer and secured with a little vaseline. The instrument is inserted into the growth, and on pushing home the plunger the seed is deposited. By deflecting the oesophagoscope in different directions, and by inserting the introducer to different depths, the seeds may be deposited through the growth with much greater uniformity than might be imagined. About twelve seeds of 1.5 mc. each are inserted. There is no reaction, but in about a week improvement in swallowing may be expected to commence, and in a favourable case the patient should in three weeks be able to swallow ordinary soft food without difficulty.

This method of treatment has the advantage of simplicity and apparently of safety, for I have never so far seen any untoward result. An obvious criticism is that there is no guarantee that the seed will not be implanted in the mediastinum or elsewhere outside the growth. As, however, it is impossible for organisms to grow in the neighbourhood of an active seed the risk is more apparent than real. The great advantage over intubation is that there is no need to pass a bougie through the lumen, always a difficult and dangerous procedure.

The Rectum.

The rectum is a region peculiarly adapted to the use of seeds, especially if the growth is situated within reach of the finger. In this case the growth itself and the whole of the pelvic tissues around it can be easily infiltrated with seeds through two small punctures in the perineum, and the simplicity of the procedure and the absence of sepsis are then very valuable. I shall describe the method as it was applied with complete success to a carcinoma on the posterior wall of the ampulla involving the sacrum. With the patient in the lithotomy position two small punctures were made in the perineum, one on each side of the tip of the coccyx, and thirty seeds of 2 mc. each were introduced in long columns so as to be deposited as uniformly as possible in and around the growth. The magazine introducer was used and its position was controlled by means of a finger in the rectum in contact with the growth. Care was taken to establish a substantial barrier of seeds in the hollow of the sacrum behind the rectum in order to irradiate both the base of the growth and the rectal glands.

Where the growth is situated at a higher level it will be necessary to expose the growth by laparotomy and to introduce the seeds across the peritoneal cavity. As a full view of the growth is thus obtained there is no difficulty in the operation, nor is the introduction of the seeds accompanied by any special risk. In these cases, however, the growth has usually encircled the bowel, producing obstruction, so that a permanent colotomy is almost essential.

The rapidity with which a tumour of the rectum may disappear is remarkable, and even in advanced cases the insertion of radium may make possible the removal of a growth previously inoperable. It is obvious, however, that it is impossible to ensure the irradiation of a growth of the rectum with the same completeness as in the case of the breast or the tongue, and it is probably safer to excise the rectum from the perineum three months after the introduction of the radium whenever this is possible.

Sections of tumours removed under these conditions certainly support this view, for although they show that the vast proportion of the carcinoma cells have been destroyed, a few still remain as a possible source of recurrence.

Cases Treated with Radium.

The following series of eighty-five cases includes those which we have treated up to the commencement of the present year, excepting a few cases which it was impossible to trace or in which for some reason the record was unsatisfactory. With very few exceptions these cases have been treated by the methods we have described, but a few early cases in which radium itself was used have been included for the sake of completeness. We feel that direct

presentation of actual cases is the only sound foundation upon which to build at the present time, for only in this way can the powers and the limitations of radium be shown.

The following notes have been suggested by a study of the cases, and express concisely the conclusions which may be drawn.

The Skin.—The skin is undoubtedly the most successful situation for the application of radium. Both basal and squamous carcinomas respond readily, and although in the former case the absence of secondary deposits is an advantage, this is somewhat balanced by a more marked tendency to local recurrence. Of the 11 cases under review, the tumour has disappeared in all, and there has been no recurrence, local or otherwise, after periods extending up to seventeen months.

The Lip.—In every instance there was a rapid local response, and 3 out of the 5 cases have remained well for six, thirteen, and fifteen months. The one fatal case was really untreatable when first seen.

The Tongue.—These were all advanced cases, untreatable by any other method. In every instance, however, there was a rapid local response, with, in every case but one, a total disappearance of the primary tumour. In the 4 cases where the glands were treated by radium they responded at once. In 5 of the 7 cases distant secondary deposits appeared, and in only one (21) is there any possibility of a permanent cure. This also was, however, a totally inoperable case.

The Mouth.—These were all entirely inoperable cases, 5 of a very advanced and extensive nature. In the only case where the growth was limited (26), although surgically inoperable, there has been no recurrence after two years. In 4 of the other cases the local growth disappeared, but recurred later. In 1 there was a local reaction of quite unexpected severity, masking the immediate effect upon the growth.

The Breast.—The 24 cases have been classed as early, advanced but operable, and inoperable. Of the 11 cases in the first group all but one have been followed up to date, and these all remain free from recurrence at periods of from six to twelve months. In 4 cases the tumour was first excised locally from doubts as to the diagnosis, but in the other 7 cases the disappearance of the tumour was entirely due to radium. Of 7 cases classed as advanced but operable, 1 was not traced, 1 was amputated after fifteen months for local recurrence, and 5 remain well after periods of from six to sixteen months. Of 6 cases which were totally inoperable, 1 died five months later from general dissemination, 1 remains locally well but has probably a thoracic deposit, and 4 remain well after periods of from six to eleven months. Out of 24 cases local recurrence has so far appeared in one case only. In 2 cases, however, the tumour did not respond, but in one of these removal of the tumour showed dense fibrosis with scattered groups of carcinoma cells.

SKIN.

No.	Age and Sex.	Duration.	Characters of Growth.	Dosage.	Result.
1	F. 74	5 weeks	Small ulcer below outer canthus left eye. Squamous carcinoma.	2 × 2 mc.	Disappeared in 5 weeks. (9 months.)
2	M. 44	13 years	Circular ulcer 2 cm. diameter in front of left ear. Squamous carcinoma.	12 × 1.5 mc.	Disappeared in 4 months. (6 months.)
3	M. 67	42 years	Recurrent basal-celled carcinoma invading voluntary muscle of cheek.	4 × 1.5 mc.	Disappearance of local recurrence. (6 months.)
4	F. 68	6 months	Ulcer 2 cm. diameter outside external canthus right eye. Enlarged pre-auricular glands. Squamous carcinoma.	6 × 2 to ulcer; 7 × 2 pre-auricular glands; 7 × 2 upper cervical glands	Rapid healing of ulcer and disappearance of glands. (4 months.)
5	F. 63	10 months	Hard ulcerated mass size of pea upper margin left pinna. No secondary glands palpable.	2 × 2 mc.	Disappeared in 4 months. (17 months.)
6	M. 83	6 months	Ulcer 3 cm. diameter left cheek. Squamous carcinoma.	10 × 2 mc.	Disappeared in 1 month. (12 months.)
7	F. 61	14 years 6 months	Carcinoma of skin. Secondary in gland of groin.	14 × 2 mc. into gland	Disappeared in 5 months. (9 months.)
8	M. 80	2 months	Ulcer 1 in. diameter behind left mastoid. No enlarged glands. Squamous epithelioma.	10 × 2 mc.	Rapid healing.
9	F. 79	Many years	Infected ulcerated mass 3 cm. diameter over left parietal region. Section: sebaceous carcinoma.	6 × 2 mc.	Complete healing in 4 months. (7 months.)
10	F. 76	7 years	Large vascular tumour 3 in. long, 1 in. wide, upper part of left neck reaching as high as the ear. No secondary glands. Probably a basal carcinoma.	15 × 2 mc.	Two months later tumour had entirely disappeared without ulceration. (5 months.)
11	M. 72	37 years	Extensive scarring from recurrent rodent ulcer. Nodule in left lower eyelid, one year.	2 × 1.5 mc.	Perfect result locally. (2 years.)

LIP.

No.	Age.	Duration.	Characters of Growth.	Dosage.	Result.
12	68	12 months	Huge fungating growth 4 in. × 2 in. with indurated base completely replacing lower lip and extending almost to point of chin. Squamous carcinoma.	32 mg., radium 5 days	Rapid disappearance of growth and reappearance of lip. Death after 10 months from secondaries in lungs.
13	61	6 months	Typical epitheliomatous growth 1 in. diameter in centre of lower lip.	5 × 1.5 mc.	Healed in 8 weeks. (15 months.)
14	47	9 months	Indurated ulcer 2 cm. diameter just above upper lip on right side. Section: squamous carcinoma.	12 mg., radium 5 days	Healed in 10 weeks. (13 months.)
15	68	8 months	Fungating epithelioma 3 × 1 cm. on right side of lower lip.	10 × 1.5 mc.	Healed in 4 months. (6 months.)
16	86	5 months	Fungating epithelioma in centre of lower lip.	8 × 2 mc.	Rapid disappearance of growth.

TONGUE.

17	59	12 months	Extensive leukoplakia with deep carcinomatous ulcer on dorsum, extending to epiglottis. Fixation and swelling of tongue. Secondary glands on both sides.	9 mg. radium 16 days	Ulcer disappeared and tongue became mobile. Healing complete in 6 weeks. Glands removed later. Died 4 months, distant secondaries.
18	49	3 months	Tumour involving whole of left side of tongue. Deep ulceration and complete fixation. Secondary glands beneath jaw.	30 mg. radium 6 days, tongue and glands	Rapid disappearance of tumour and healing of ulcer. Died 2 months, distant secondaries.
19	70	12 months	Deeply ulcerated carcinoma occupying posterior half of right side of tongue and extending to epiglottis. Glands in neck. Squamous carcinoma.	8 × 1.5 mc.	Rapid local improvement. Glands removed later and 8 × 1.5 mc. inserted. Died 6 months, distant secondaries.
20	72	6 months	Large ulcer on right side of tongue, extending to epiglottis. Glands in anterior triangle. Squamous carcinoma.	21 mg. radium 5 days	Rapid healing of ulcer. 8 months later new carcinoma on left tip of tongue, 8 × 1.5 mc. Healed but recurred. Died 11 months, distant secondaries.
21	64	3 months	Indurated ulcer on left side of posterior surface of tongue, extending to epiglottis and on to the fauces. Polygonal carcinoma, not squamous. Glands behind angle of jaw.	20 × 1.5 mc. tongue and glands	Rapid disappearance of ulcer and of glands. Well after 8 months.
22	43	4 months	Indurated ulcer in right border of tongue and floor of mouth. Glands in angle of jaw. Squamous carcinoma.	12 × 2 mc. tongue 28 mg. radium 6 days glands and floor of mouth	Rapid healing of tongue and disappearance of glands. Recurrence after 5 months in more distant glands. No recurrence in tongue or glands.
23	63	4 months	Deep ulcer between root of tongue and jaw on right.	12 × 2 mc.	Three months later cavity persisted. Radium again inserted. After 9 months no evidence of carcinoma in tongue. Secondaries in glands dissected out.

MOUTH.

No.	Age.	Duration.	Characters of Growth.	Dosage.	Result.
24	62	3 months	Indurated tumour at back of floor of mouth on left side. Mass of hard glands behind and below jaw on left. Trismus so that teeth could only be separated 1/2 in., but extensive ulceration over fauces on left side could be made out. Squamous carcinoma.	Access obtained to tumour by resection of left angle of lower jaw. 6×2 mc. Removal of glands	Rapid improvement. Softening of tumour and disappearance of ulcer. No recurrence discovered after six months.
25	63	18 months	Floor of mouth covered by fungating growth, which has penetrated tongue and appears on dorsum. Tongue enormously enlarged by growth. No glands. Squamous carcinoma.	6 mg. radium 6 days, 8 × 1.5 mc. seeds	Rapid disappearance of growth and reduction in size of tongue. Died 4 months, secondaries in glands.
26	55	3 months	Fungating carcinoma of posterior end of hard palate on right side, extending on to alveolus.	6 × 1.5 mc.	Entire disappearance of growth in 14 days. Well after 2 years.
27	72	15 months	Ulcerating carcinoma covering whole of hard palate on right side.	9 × 1.3 mc.	Oral part of growth disappeared, revealing perforation of palate. Died 5 months, local recurrence and secondaries.
28	69	3 weeks	Indurated ulcer in floor of mouth beneath tip of tongue, extending through jaw into substance of chin.	16 × 2 mc.	Complete disappearance of growth in 6 weeks. Well after 6 months.
29	63	2 months	Indurated tumour involving fauces and root of tongue on right side. Enlarged glands.	20 × 2 mc.	Severe reaction with great swelling and pain. Result doubtful.

BREAST. EARLY CASES.

30	41	3 months	Small tumour in axillary quadrant of right breast. No enlarged glands. Tumour excised. Polygonal carcinoma.	77 mc.	Normal reaction. After 5 months an enlarged gland was felt in axilla. Remained stationary, 3 months later radon inserted as precaution. Well after 12 months.
31	51	1 month	Small hard irregular tumour in axillary quadrant of left breast. Tumour excised. Spheroidal carcinoma.	65 mc.	Normal reaction (12 months.)
32	51	2 months	Small hard tumour in axillary quadrant of right breast.	78 mg. radium 6 days	Disappearance of tumour in 2 months. (12 months.)
33	63	4 months	Small hard tumour in axillary quadrant of left breast. No glands.	78 mg. radium 6 days	In 2 months tumour much smaller. Later replaced by small soft swelling. (10 months.)
34	62	5 weeks	Tumour size of small orange in axillary tail of left breast.	40 × 2 mc. seeds	Rapid diminution in size. (Not traced.)
35	63	3 months	Small hard tumour in outer portion of left breast, adherent to skin.	50 × 2 mc.	Rapid disappearance of tumour. (11 months.)
36	34	3 months	Small hard nodule above right nipple. Local removal. Spheroidal carcinoma.	50 × 2 mc.	Normal reaction. (10 months.)
37	48	2 months	Early scirrhous carcinoma in outer portion of right breast.	50 × 2 mc.	In 2 months tumour replaced by soft indefinite swelling. Disappeared later. (11 months.)
38	44	18 months	Tense elastic tumour in upper inner quadrant of left breast. Removed locally. Carcinoma containing few cells.	50 × 2 mc.	Local result perfect, but followed by severe pain in shoulder. (8 months.)
39	74	6 months	Tumour 2 in. diameter in lower outer quadrant of left breast. Attached to skin.	50 × 2 mc.	Rapid softening of tumour. Local denudation of skin. (6 months.)
40	64	1 week	Small hard tumour below left nipple, attached to skin and deep fascia.	50 × 2 mc.	Rapid disappearance of tumour. (6 months.)

ADVANCED BUT OPERABLE CASES.

41	66	2 months	Indurated tumour attached to nipple, skin, and fascia, in lower half of right breast.	60 mg. radium tumour 5 days; 23 × 2 mc. seeds glands	In one month disappearance of tumour. Well after 16 months.
42	64	18 months	Ulceration of left nipple, which has now completely disappeared, and is replaced by an ulcer 1 in. diameter. (Paget.) Tumour in upper part of breast about 2 in. diameter attached to skin. Secondary glands in axilla.	64 mg. radium 9 days	In 3 months ulcer healed, glands disappeared, tumour soft but still present. Gradual disappearance. (15 months.)
43	61	6 months	Hard tumour 2 in. diameter in upper portion of left breast attached to skin. Enlarged axillary glands.	88 mg. radium 5 days	Tumour diminished in size. Not traced.
44	63	2 years	Hard irregular tumour in axillary quadrant of right breast attached to skin and fascia.	50 × 2 mc.	Rapid disappearance of tumour. Skin broke down from excessive reaction. (9 months.)
45	56	1 year	Rounded tumour in upper and inner quadrant attached to skin and fascia. (R.)	50 × 2 mc. seeds	Tumour did not respond. Removed 4 months later. Sections showed dense fibrosis and scattered areas of carcinoma cells. Denudation of skin showed that failure was not due to inadequacy of dose. (8 months.)
46	75	7 weeks	Large irregular mass in inner lower quadrant of right breast, attached to skin and fascia.	126 mg. radium 5 days	Tumour remained stationary in size. Skin over it broke down. (No change.)
47	44	2 months	Small hard nodule in lower outer quadrant of left breast, attached to skin and fascia.	30 × 1.5 radon seeds (gold)	Rapid disappearance of tumour, replaced by deep pucker of skin. Well for 15 months. Then local recurrence, and breast amputated.

INOPERABLE CASES.

48	50	2 years	Ten years ago complete Halstead of right breast. Recurrence over fourth and fifth right costal cartilages. Hard irregular tumour 1½ in. diameter, involving skin and chest wall.	10 × 1.5 mc. seeds	Very rapid disappearance of tumour. Well after 11 months.
49	71	2 years	One year ago amputation of left breast for carcinoma. Early recurrence in scar. Now three hard nodules and pain and swelling in arm.	7 × 1.5 mc. into nodules	Nodules disappeared. Not traced.
50	59	4 years	Huge ulcerating carcinoma of left breast fixed to skin and muscles. Nipple destroyed, glands in axilla, secondary nodules in skin.	50 × 2 mc.	Rapid absorption of tumour, which was in 4 months replaced by scar. After 6 months recurrence in axillary glands. 20 × 2 mc. Silver seeds inserted. Glands disappeared. After 10 months swelling and paraesthesia in hand. No local recurrence in breast or axilla.
51	81	5 years	Ulcerating carcinoma in axillary quadrant of right breast, fixed to muscle.	50 × 2 mc.	In 3 months surface healed and growth replaced by fibrous mass. Well after 10 months.
52	56	10 months	Large ulcerated tumour in axillary quadrant of right breast. Fixed to deep tissues. Quite inoperable. Patient very ill.	50 × 2 mc.	Six weeks later whole tumour sloughed out; small granulating cavity left. Local success complete, but after 4 months secondary tumour appeared in frontal bone. Died after 5 months with very extensive secondaries. No local recurrence.
53	70	12 months	Large nodular tumour in axillary quadrant involving skin. Secondary glands.	50 × 2 mc.	Gradual shrinkage of tumour. Ulceration of involved skin. Well after 8 months.

OESOPHAGUS.

No.	Age.	Duration.	Character of Growth.	Dosage.	Result.
54	53	6 months	Carcinomatous stricture 12 in. from teeth.	6 × 1.5 mc.; dilated	Very marked improvement. Swallowed well for 8 months. 10 months—oesophagoscopy showed a dense stricture 1½ in. long, the walls of which were apparently formed of scirrhous carcinoma. Dilated up to 12 mm.; tube inserted. In the lumen of this tube were packed six needles containing in all 24 mg. of radium. They were left in for 4 days and then removed, the tube being left in place. Marked improvement. Lived 14 months.
55	61	4 months	Large growth 10 in. from teeth.	8 × 1.5 mc.	No improvement. 2 months, oesophagoscopy showed hard growth extending into pharynx. 8 × 1.5 seeds. Later, gastrostomy. Lived 7 months.
56	53	4 months	Carcinoma 15 in. from teeth.	8 × 1.5 mc.	Marked improvement. Swallowed well for 5 months. Recurrence at 6 months. Gastrostomy. Lived 14 months.
57	54	4 months	Carcinoma 10 in. from teeth.	7 × 1.5 mc. Tube	Marked improvement. Recurrence at 5 months. Oesophagoscopy. Infiltrating growth 2 in. above level of tube. (Post-mortem, perforation of aorta by growth.) Lived 5 months.
58	76	6 months	Carcinoma 10 in. from teeth.	8 × 1.5 mc.	No improvement. Not traced.
59	72	4 months	Carcinoma 10 in. from teeth. Condition of patient desperate.	8 × 1.5 mc.; dilated	Very marked improvement. Swallowing almost normal. At 6 months radiogram showed definite obstruction at level of hilum, but still swallowing well. Lived 9 months.
60	53	10 weeks	Obstruction above cardia, also obstruction 10 in. from teeth.	6 × 2 mc.	Marked improvement. Two months later developed pyloric obstruction. Lived 2 months.
61	49	5 weeks	Ring carcinoma 12 in. from teeth.	8 × 1.5 mc.; dilated	Very marked improvement. After 7 months cerebral embolus. Lived 7 months.
62	59	5 weeks	Large growth in anterior wall.	15 × 3 mc.; dilated	Marked improvement. Lived 10 months.
63	69	2 months	Carcinoma 2½ in. above cardia.	11 × 2 mc.; dilated	Improvement. Lived 2 months.
64	51	9 months	Growth encircling oesophagus 12 in. from teeth.	9 × 2 mc.	Marked improvement. Living after 5 months.
65	58	7 months	Fungating carcinoma 12 in. from teeth.	10 × 2 mc.; dilated	Improvement. Living after 4 months.
66	62	12 months	Large tumour in anterior wall.	10 × 2 mc.	No improvement. Not traced.
67	60	6 months	Large fixed ulcer in anterior wall. Dilatation impossible.	12 × 2 mc.	Very marked improvement. Well after 4 months.
68	61	5½ months	Round disc-like growth on posterior wall 12 in. from teeth, below this encircles wall. Dilatation impossible.	6 × 2 mc.	No improvement. Not traced.
69	49	4 months	Large growth completely obstructing lumen.	12 × 2 mc.	Improvement. Not traced.
70	55	4½ months	Fungating irregular nodular growth extending across oesophagus 13 in. from teeth.	12 × 2 mc.	Marked improvement, but intubation required later.
71	71	6 months	Large fungating growth 8 in. from teeth.	12 × 2 mc.	Marked improvement. Well after 3 months.
72	70	4 months	Carcinomatous stricture 8 in. from teeth, another much narrower just below.	12 × 2 mc.; dilated	No improvement.
73	56	6 months	Carcinomatous stricture 10 in. from teeth. Nodular growth extending for about 2 in.	10 × 2 mc.	Improvement. Gastrostomy later. Lived 6 months.
74	60	4 months	Tumour 17 in. from teeth bulging into oesophagus from left side. Condition of patient desperate.	8 × 1.5 mc.	Very marked improvement. 6 weeks later swallowing normal. X-ray, apparently normal oesophagus. Swallowing normal for 9 months. Then recurrence of dysphagia. Oesophagoscopy. Secondary nodules 6 in. above site of original growth. 10 × 2 seeds. Immediate improvement. (Haemorrhage.) Lived 11 months.
75	60	6 months	Fungating carcinoma at middle of oesophagus.	8 × 1.5 mc.	Marked improvement. Lived 3 months.
76	53	18 months	Fungating carcinoma 12 in. from teeth.	10 × 2 mc.	No improvement. Lived 2½ months.
77	42	8 months	Nodular carcinoma encircling oesophagus, 18 in. from teeth.	12 × 2 mc.	Marked improvement. Well after 8 months.
78	77	3 months	Carcinomatous stricture 12 in. from teeth.	12 × 2 mc.	Improvement. Lived 4 months.
79	56	4 months	Nodular carcinoma 12 in. from teeth.	12 × 2 mc.	Remarkable improvement. Swallowing normal for 8 months. Recurrence of obstruction after 8 months. Localized fungating carcinoma at same site. Radon again inserted.

VARIOUS.

No.	Age and Sex.	Duration.	Characters of Growth.	Dosage.	Result.
80	M. 60	1 year	Indurated nodular carcinoma of lesser curve of stomach extending on to posterior wall.	18 mg. radium for 6 days	Improved at first. Died after 6 weeks from peritonitis. Post mortem, tumour had disappeared and was replaced by a large chronic ulcer involving liver and pancreas.
81	F. 72	5 weeks	Nodular growth involving both lobes of thyroid, attached to skin and compressing oesophagus.	20 × 2 mc.	10 days complete disappearance of growth and of pressure symptoms. No local recurrence. Died 7 months later from secondary deposits in liver.
82	F. 58	1 month	Spontaneous fracture. Large tumour replacing neck of right femur. Sections: columnar carcinoma of intestinal type.	8 × 1.5 mc.	Size of tumour rapidly diminished, bone united. 5 months later, reappearance of tumour. 50 × 2 radon seeds. Tumour diminished in size and pain reduced. One year later bone soundly united. No local recurrence, but secondaries in spine.
83	M. 68	9 months	Large mass of carcinoma in right anterior triangle of neck extending deep to jaw. Gross sepsis.	30 × 2 mc.	Very temporary improvement. Essentially a hopeless case.
84	M. 62	1 year	Large tumour in upper part of anterior triangle of neck. (L.)	31 mg. radium for 5 days	Swelling reduced in size and pain entirely disappeared. Four months later recurrence of swelling and pain.
85	F. 45	4 months	Hard ulcerated mass on posterior surface of rectum, 3 in. diameter; absolutely fixed to sacrum.	30 × 2 mc.	Rapid diminution in size of tumour, which was replaced by a firm fibrous nodule. 11 months later, small local recurrence. 14 × 2 mc. Well after 16 months.

The cases show that, as a rule, carcinoma of the breast readily responds to radium, both in the primary tumour and in secondary deposits. In inoperable cases brilliant local results may be expected, but as in these cases the ultimate outlook depends on the existence of secondary deposits, local disappearance must not be interpreted as cure. In operable cases we feel that the results so far obtained justify the use of radium by the method we have indicated. In these cases, however, it is of the utmost importance that they should be kept under the closest observation, so that any recurrence may receive immediate attention. The treatment of carcinoma of the breast by radium must at present be regarded as in the experimental stage, although personally we regard the experiment as a very hopeful one.

The Oesophagus.—Carcinoma of the oesophagus is at the present time, and perhaps essentially, an incurable condition, and one can only aim at enabling the patient to swallow. The 26 cases here reported show beyond question that in a large proportion of cases this can be achieved by means of radium, giving relief for periods up to fourteen months. In 15 of these cases the relief was such that the patient could swallow soft solids with ease, and in 4 he returned to an almost normal condition; in 5 other cases there was definite improvement. There is thus no doubt that carcinoma of the oesophagus responds readily to radium introduced by this technique. We may have been unduly cautious in dosage, but those who are familiar with the direct examination of these cases will realize the risks involved. We can happily claim that no untoward event has followed on the operation in any instance, so that in skilled hands the method would appear to be reasonably safe.

Various Sites.—These were all experiments in otherwise hopeless cases. In 3, however, there was very striking improvement and relief over a long period. In many ways Cases 81 and 82 showed the most remarkable results in the whole series, although followed later by secondary deposits. In the case of carcinoma of the rectum the tumour has entirely disappeared, and the patient is in perfect health after sixteen months.

THROMBO-ANGIITIS OBLITERANS IN NON-HEBREW SUBJECTS, AND REPORT OF A CASE OF CHRONIC ULCUS CRURIS IN A YOUNG MAN.

BY

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A CONSIDERABLE proportion of cases of thrombo-angiitis obliterans have been reported during recent years as occurring in Great Britain and Ireland, in English, or at least non-Hebrew, families.* The following men were recently almost simultaneously in-patients at the German Hospital, and their symptoms present certain special points of interest. The first two are certain cases, the third one is altogether doubtful.

CASE I.

An Englishman (no Hebrew ancestry), aged 22 years, was admitted on July 24th, 1929, on account of cyanotic discoloration of the region of the left great toe, and pain and symptoms typical of thrombo-angiitis obliterans dating from January, 1928. In other respects the patient appeared healthy, and his Wassermann reaction was negative. From the age of 16 he had been accustomed to smoke cigarettes up to twenty daily.

On September 7th, 1929, a modification of periarterial sympathectomy was performed on the left thigh by Mr. Wright during Mr. Rast's absence. The operation was followed by an immediate rise in the superficial temperature of the affected limb and by diminution of pain, but the improvement was not lasting, nor was the result of diathermy really satisfactory. Although slight "mummification" developed at the tip of the left great toe, the condition is now rather better than worse, and amputation has not yet been resorted to. The clinical picture is the typical one seen by us in Hebrew cases, but the patient's age is younger than that of most Hebrew sufferers. Though the local condition in this case is very bad, it was almost as bad for a long while in one of the earliest of Dr. Weber's Jewish cases of the kind—a man who is still living and has all his limbs.*

CASE II.

An English assistant in a drug factory, without any Hebrew or foreign ancestry, and aged 38, was admitted on June 1st, 1929, with a large chronic deep ulcer, like a tabetic "perforating" or pressure ulcer, about the size of a penny, at the back of the right heel. This had started as a mere crack in the thick skin in February, 1928, and had gradually enlarged since then; so far as the patient himself knew there had been no traumatic or other cause for its commencement. He compared the pain in his right heel and right calf with that of a toothache. For about six months before the appearance of the ulcer there had been pains in the calf of the right leg on walking; these were of the usual intermittent claudication type, as in typical Hebrew cases of thrombo-angiitis obliterans. The patient had been a great smoker in the army during the war. Before the commencement of the ulcer there had likewise been attacks of pallor and numbness in the toes of the right foot, but otherwise the patient had enjoyed good health.

No pulsation was felt in either arteria dorsalis pedis. Apart from the thrombo-angiitis obliterans we found no abnormal symptoms by examination of the thoracic and abdominal viscera, the nervous system, the eyes, and the blood and urine. The brachial blood pressure was 135/75 mm. Hg. The Wassermann reaction was negative. The knee-jerks were rather active. Warm weather somewhat lessened the pain. On July 9th, 1929, Dr. A. P. Cawadias examined the patient's limbs with Pachon's oscillometer, and found the oscillometric index as follows:

	Right side	Left side
Calf of leg	0	1½
Thigh	6	6
Upper arm	5½	5½

Both legs therefore showed arterial ischaemia.

After treatment by insulin and other methods—including periarterial sympathectomy on August 30th—had been tried in vain, Mr. Rast resorted to amputation of the right leg on September 14th; owing to gangrene in the stump a second amputation had to be performed on September 21st through the middle of the thigh. The patient left the hospital on October 18th in good condition, though he still had a little pain "in the amputated limb." Since then he is reported to have been doing well. On macroscopic and microscopic examination of the parts from both amputations the arteria tibialis anterior seemed normal, but the arteria tibialis postica appeared to be rather small, and was blocked by a canalized thrombus. The popliteal artery (removed at the second amputation) was blocked by more recent, partly organized, thrombus.

In this case the deep ulcer at the heel was an unusual early symptom in thrombo-angiitis obliterans. In the hospital at the same time with this patient was a somewhat older man, aged 50, complaining of a chronic callous ulcer under the left great toe, but his blood serum gave a strongly positive Wassermann reaction, and antisyphilitic treatment led to an excellent result. It is interesting that in the older man the pulsation in the arteria dorsalis pedis on both sides was excellent, and by Pachon's oscillometer Dr. A. P. Cawadias found the "oscillometric index" at the right calf to be 4, against 5 at the left calf, suggesting that the chronic ulcer in the left foot had increased the blood supply on the left side and had made the "oscillometric index" somewhat greater in the left than the right leg.

CASE III.

An Englishman, aged 25 years (without any Hebrew or foreign ancestry), was admitted on May 8th, 1928, on account of a large indolent chronic ulcer on the left leg, with much pigmentation in the neighbourhood; on the other leg he had similar pigmentation and scars of previous ulcers. He said he had never had any decided varicose veins, and the leg ulcers had first developed after pneumonia about the winter 1925–26. He was of slender build and rather pale, but otherwise apparently healthy. He mentioned that he had been accustomed to smoke about twelve cigarettes daily since the age of 16. There was nothing special in the family history, except that his father had suffered from chronic ulcers on both legs for thirty years before his death at the age of 66. Examination of the thoracic and abdominal viscera, nervous system, eyes, urine, and blood revealed nothing abnormal, and the Wassermann reaction was negative. A periarterial sympathectomy in the left thigh in February, 1927 (at another hospital), had done no good.

After prolonged rest in bed, and the failure of a variety of methods of treatment, Mr. Rast, at the patient's urgent request,

*See, for instance, Telford and Stopford, *British Medical Journal*, 1924, ii, p. 1035; Sir W. I. de Courcy Wheeler, ibid., 1927, i, p. 225; Marnoch and MacRae, *Journ. Path. and Bact.*, 1927, vol. 30, p. 39; R. O. Girdwood, ibid., 1927, vol. 30, p. 643; Girdwood, ibid., 1928, vol. 31, p. 562.

*F. Parkes Weber, *Lancet*, 1908, i, p. 152; 1925, ii, p. 21.

amputated the left leg at the junction of the upper and middle thirds of the tibia on June 5th, 1929. Macroscopic and microscopic examination of the blood vessels at the site of amputation showed nothing special, and the wound healed up well at first. On July 11th, when he was getting about on crutches, slightly varicose veins were noticed in the right leg. In the right foot there was good pulsation in the dorsal artery and in the posterior tibial artery behind the internal malleolus. The brachial systolic blood pressure in both arms was 125 mm. Hg. The "oscillometric index" at the left thigh (above the site of amputation) was three divisions, and that at the right thigh, and also at the right calf, was five divisions.

However, on September 25th amputation through the middle of the left thigh had to be performed because of chronic gangrenous trouble in the stump. Macroscopic examination of the amputated part revealed some periarterial "matting" about the popliteal artery, and microscopic examination showed the artery to contain some not very old thrombus. The patient had apparently, for the last month or so, followed our advice in giving up tobacco smoking altogether. By October 19th the operation wound had almost completely healed, and there were no signs of ischaemic circulation in the stump, but a sequestrum formed, which had to be removed later on. There is still slight discharge from part of the operation wound (February, 1930), though the patient can get about well on crutches.

We confess that in the third case the diagnosis of the exact nature of the condition remains uncertain. The changes in the popliteal artery hardly afforded sufficient explanation, and an ulcus cruris must be very rare indeed as the sole or main symptom of thrombo-angiitis obliterans. The supposition that the large leg ulcer was of the ordinary kind, though without obvious varicose veins, in an individual with very poor local tissue resistance against trauma and pathogenic microbes of low-grade virulence, seemed hardly tenable for the present case. In this connexion we searched especially for any sign, however slight, of congenital haemolytic jaundice (anaemia), but with negative results.*

Remarks.

One of us (F. P. W.) has formerly seen various cases of intermittent claudication of lower extremities in English (non-Hebrew) subjects, some of them medical practitioners, but, so far as he could judge, they were mostly due to arterio-sclerosis (atheroma) of large arteries. He believes that such cases seldom progress to actual gangrene, or die of the disease in question, but in one case a post-mortem examination (after death from another disease) was made by the expressed wish of the patient, and old advanced atheroma of the abdominal aorta and iliac arteries was discovered.† Syphilitic arterial disease is certainly very rarely the cause of symptoms resembling thrombo-angiitis obliterans.‡

Recently, at other London hospitals, Dr. Weber has been given the opportunity of seeing examples of apparently true thrombo-angiitis obliterans in men without any Hebrew ancestry; in one man amputation was necessary, and in another gangrene occurred, followed by death.§ A probably arterio-sclerotic case was that of a doctor who, in 1912, when 49 or 50 years old, suffered from severe ischaemic symptoms in the left leg. Dr. Weber saw him first in 1913. He recovered sufficiently to do very active local work during the war, but developed angina pectoris in 1922. From 1924 he had symptoms of occlusion of various blood vessels. The attacks of angina pectoris continued, and he died with gangrene of the right leg in December, 1926, having refused amputation.

It seems as if intermittent claudication from arterio-sclerosis (atheroma) is almost as much confined to males as is thrombo-angiitis obliterans, and in both classes nicotine is usually a prominent item in the past history. In this connexion one must remember the extreme rarity of nicotine abuse among Jewish women of the poorer classes; but it has even been suggested that the female sex factor bestows constitutional immunity from thrombo-angiitis obliterans. Cardiac symptoms (slight angina pectoris, etc.) are probably more likely to be associated with intermittent claudication of the lower extremities when the latter is due to arterio-sclerotic changes than when it is due to thrombo-angiitis obliterans. Indeed, in cases of intermittent claudication in lower extremities, due either to arterio-sclerotic changes or to thrombo-angiitis obliterans, the supervention of angina pectoris or coronary artery symptoms (in cases known to Dr. Parkes Weber) suggests that the intermittent claudication is caused by arterio-sclerosis (atheroma)—alone or superadded to thrombo-angiitis obliterans.

* On the occurrence of chronic leg ulcers in cases of congenital haemolytic jaundice, see F. P. Weber, *Practitioner*, 1920, cxxiv, p. 392; Gänsslen, *Klin. Woch.*, 1920, ix, p. 1208; *Deut. Arch. f. Klin. Med.*, 1925, cxlvi, p. 22.

† In this case there had likewise been cutaneous xanthoma, and it is referred to at some length by F. Parkes Weber, *Cutaneous Xanthoma*, etc., p. 14. 1924. London: H. K. Lewis and Co.

‡ Cf. A. S. Warthin, Syphilis of the Medium and Smaller Arteries, *New York Med. Journ.*, 1922, vol. 115, p. 69.

§ In this case, however, the subsequent microscopical examination (Professor R. Donaldson) revealed atherosclerosis as the arterial disease.

PERNICIOUS ANAEMIA AND BLOOD TRANSFUSION.

BY

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THE introduction of liver treatment for pernicious anaemia by Minot and Murphy completely altered the outlook in what was usually a fatal disease. Further research, stimulated by Castle's[1] work, by Sturgis, Isaacs, and Sharp,[2] and later by Wilkinson[3] and by Conner,[4] has demonstrated the value of hog's stomach in the treatment of this disease. More recently Renshaw[5] published a case which relapsed on liver and which responded to hog's stomach (ventriculin).

There is a real danger, therefore, that the older methods of treatment may be relegated too much to the background. I have encountered cases that did not respond well to liver treatment, and in many of these the giving of arsenic and a blood transfusion has been largely responsible for tiding the patient over a dangerous period.

The most important point in giving a blood transfusion is correct grouping of the donor. I have sometimes had a little difficulty with Group III serum, as occasionally the clumping is slow and not very definite. In contrast, if clumping occurs in Group II serum, it is usually quick and leaves no room for doubt. It is a wise precaution to confirm all Group IV donors by using also a diagnostic Group IV serum. Brines[6] recently stated that since adopting this as a routine measure no error in blood grouping has been detected in his laboratory during the past six years. While serious reactions rarely occur with Group IV donors, in my own experience fewer reactions occur when the donor is of the same group as the patient, but, although I prefer patient and donor to be of the same group, I never hesitate to use a Group IV donor, no matter to which group the recipient belongs.

In pernicious anaemia the giving of unsuitable blood is a very serious matter, because, even if the transfusion is stopped at the first sign of restlessness, backache, or dyspnoea, death may follow if the patient is very anaemic. Some time ago I was asked to do a transfusion on a patient with a very low red cell count. As he belonged to Group I—the universal recipient—no care was taken in selecting a donor. After about 40 c.cm. of blood had been given he became restless, and said that the blood was too strong for him. The transfusion was stopped, but the patient died eight hours later. He was grouped again before he died, and was undoubtedly a Group I, unless the particular tubes of serums used were at fault, which is unlikely.

Unmodified blood was used in all the transfusions referred to in this paper, the Louis Jubé syringe being employed. This instrument was demonstrated to me by Dr. Skinner of Sheffield, who described it in the *British Medical Journal*[7]; since then I have done over a hundred transfusions with it, and I regard it as the most convenient method when a transfusion of 500 c.cm. or less is given. Above 500 c.cm. it is sometimes inclined to clot, but fortunately this is noticed early, and the transfusion can be discontinued. Reactions following the use of untreated blood are said by Brines[6] to be far fewer and less severe than when citrated blood is used.

I wish to record here an unusual reaction which occurred when using a Group IV donor; the patient, who belonged to Group II, was suffering from pernicious anaemia. At

the end of the transfusion the patient's face began to swell, and for ten minutes I was almost afraid to look at him, as the swelling continued. There were no other symptoms or signs; adrenaline, which was given at once, probably prevented more serious complications, such as oedema of the lungs or glottis. It was ten hours before the face was normal, yet at no time did the patient feel backache, dyspnoea, or shivering, while the pulse remained between 70 and 75 per minute.

Some physicians are of the opinion that there is more danger in giving a blood transfusion to a patient with pernicious anaemia than to patients with other forms of anaemia. I have noticed slight reactions quite as often in other types of anaemia; so far from being a dangerous proceeding, blood transfusion is practically devoid of risk if the grouping is correct, and it is often a life-saving measure.

After a transfusion there is frequently an immediate rise of temperature. This rise occurs in spite of using a donor of the same group as the patient, the temperature quickly falling to its usual height or to a lower level. In most cases of pernicious anaemia, when the patient has been running a temperature, there is a decided tendency for it to fall during the succeeding days and for a general improvement to set in, with an increase in the haemoglobin and in the number of red blood corpuscles, but this is not always the case, as will be shown later.

In severe cases of pernicious anaemia, with a low haemoglobin percentage and red blood cell count, it may happen that in spite of liver treatment no improvement takes place or improvement is very slow. This applies to raw liver, cooked liver, and to at least three varieties of liver extracts on the market. This poor response to liver is most noticeable when the patient is very anaemic and has a temperature above 100° F., and where the outlook is unfavourable or at any rate alarming. It is to this type of case that I wish to direct attention, for the results of a timely blood transfusion in these cases may be excellent.

The first three cases, described below, will bring out the points I wish to emphasize.

CASE I.

A woman, aged 49, had been in ill-health for over a year. Three weeks before I saw her she had become very anaemic; examination indicated a typical case of pernicious anaemia. The blood count was as follows: red blood cells 1,250,000 per c.mm.; haemoglobin 30 per cent. The temperature was 100° F.; faintness followed the slightest exertion.

Treatment was started at home, and she was admitted to hospital on the following day. She was given daily half a pound of whole liver, and liver extract equivalent to half a pound of liver; in addition liquor arsenicalis was prescribed for her. The temperature (Chart 1) became higher and higher on each succeeding day. Six days after beginning treatment her condition

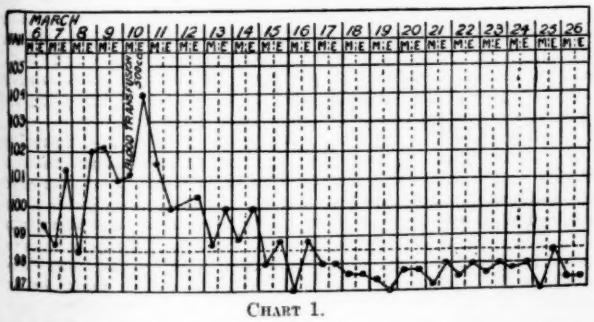

CHART 1.

was far worse than on admission. The red blood cells were then 1,000,000 per c.mm., and the haemoglobin 26 per cent. A transfusion of 500 c.cm. of blood was given, and improvement, it will be seen, set in forthwith, the temperature falling. A week after the transfusion the blood count was: red blood cells 1,800,000 per c.mm.; haemoglobin 40 per cent. Two weeks after this the red blood cells were 3,290,000 per c.mm.; haemoglobin 68 per cent.

A more typical and less dramatic case is the following one.

CASE II.

A man, aged 32, was admitted in a more or less desperate condition. A diagnosis of malignant endocarditis was made from the presence of haemic murmurs and a high temperature. The blood count was as follows: red blood cells 830,000 per c.mm.; haemoglobin 26 per cent.; the average diameter of the red blood cells was 7.8 μ.

He was put on whole liver, half a pound daily, and liquor arsenicalis, but his condition did not improve; during the first five days of liver treatment his temperature became higher (Chart 2). He was delirious at night, and in his lucid moments complained of feeling light-headed. He was given a transfusion of 600 c.cm. of blood, and his temperature then began to fall. His general condition improved, but he was still mildly delirious

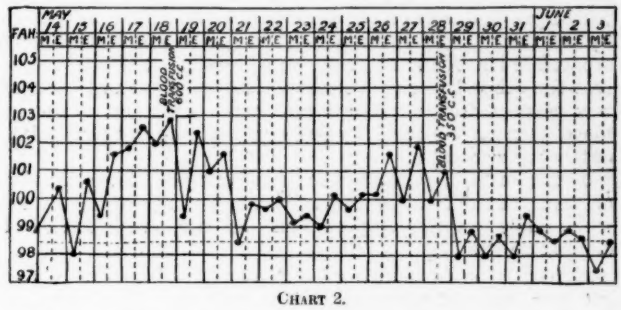

CHART 2.

at night. The blood picture was as follows: red blood cells 1,450,000 per c.mm.: haemoglobin 32 per cent.

This condition persisted for a further ten days. At the end of this period he was still running a temperature, which tended to become higher, in spite of the fact that he had had raw liver for fifteen days. A blood count at this stage was as follows: red blood cells 1,500,000 per c.mm.; haemoglobin 33 per cent.

At this point a second blood transfusion was given; after this he began to make good progress, the temperature gradually falling, with distinct improvement in the blood picture. A blood count taken a week later showed the red blood cells to be 3,400,000 per c.mm. He was discharged two weeks later, and was able to get about perfectly well.

CASE III.

A woman, aged 46, was treated with liver for pernicious anaemia, and told to continue taking this in the form of liver extract. For a few weeks she did as she had been advised, but after this apparently she did not take it regularly, until about a year later, when she began to feel weak and noticed that she was again becoming anaemic. When I examined her I was told that she had taken the equivalent of a quarter of a pound of liver daily as extract for the past three weeks. She was mildly delirious at times, but a more alarming sign was persistent dyspnoea. The practitioner who attended her told me that her temperature had kept between 101° and 102.5° F. for several days. The red blood cells were 1,300,000 per c.mm.; haemoglobin 28 per cent.; but from her general condition a fatal issue seemed certain. From that day she received arsenic and half a pound of raw liver daily, and on the next day I gave her a transfusion of 500 c.cm. During the next four days there was a decided tendency for the temperature to fall, and, although this was followed by a rise, the temperature was normal at the end of ten days, and the patient was convalescent in two weeks.

It may be contended that these three patients—and others similarly affected to whom I gave blood transfusions—would have improved on liver alone if left a sufficiently long time, but I was not prepared to run any risks, as I have seen four patients that have died who were given liver and arsenic, and in three of these four blood transfusions had been performed by me. Patients without pyrexia, in whom the red blood cell count was above 1,500,000 per c.mm., were never given blood transfusions, and these slowly but surely improved on whole liver. I do not wish, therefore, to convey the impression that a blood transfusion is essential for all patients with a low red blood cell count, and I admit that even those with a high rise of temperature may possibly weather the storm, but the risk appears to me to be great.

Of the four cases that died, one was the Group I patient referred to above, who died eight hours after the transfusion. Of the remaining three cases, two were given liver extract and no whole liver, as it was thought that they would be unable to take the necessary amount of whole liver, and it was hoped that the extract would be of equal benefit. One of these received a blood transfusion of 600 c.cm., and the other received two transfusions of 500 c.cm. on each occasion. The fourth patient was not given a transfusion, as she was our first case of pernicious anaemia to receive liver, but she vomited repeatedly, and this probably accelerated her death.

I have been told by many that a blood transfusion should not be given to a patient with pernicious anaemia who is running a high temperature, but I have repeatedly given 500 c.cm. of blood to patients with a temperature of 102° F., and so far I have not had a severe reaction either in cases where both donor and recipient were of the same group, or where the donor belonged to Group IV and the patient was of another group.

In most cases of pernicious anaemia, and in all cases where patients have a temperature, I give liquor arsenicalis by the mouth. In three non-febrile cases which were being treated with liver extract, one showed no improvement and the other two only very slow improvement until arsenic was given, when a prompt and rapid increase in the red blood cells took place. In each case a different firm's liver extract was used.

The case of a patient who was kept for thirty-six days on liver extract alone without showing improvement, and who made rapid progress on arsenic, will suffice to emphasize this.

CASE IV.

A man, aged 37, was admitted on November 23rd, 1928. Red blood cells were 1,600,000 per c.mm.; haemoglobin 36 per cent. He was put on liver extract in amounts equivalent to half a pound of whole liver daily without other treatment. The succeeding counts were as follows:

December 4th: Red blood cells 1,620,000 per c.mm.; haemoglobin 37 per cent.
December 15th: Red blood cells 1,650,000 per c.mm.
December 21st: Red blood cells 1,520,000 per c.mm.
December 29th: Red blood cells 1,340,000 per c.mm.

On December 29th liquor arsenicalis was prescribed in increasing doses, and on January 14th the red blood cell count was 3,370,000 per c.mm.

In the concluding paragraph, referring to liver extract, the report[8] of the Committee on Pernicious Anaemia of the Harvard Medical School states:

"Because one lot of a product has been effective it does not prove that subsequent lots will be satisfactory, as the experience of the committee under the best conditions at one time demonstrated."

Since treating the case just mentioned I have advised patients that, although they may alternate whole liver with liver extracts, on no account must the whole liver be stopped. I always double the dose of extract; if the patient is receiving whole liver in quarter-pound portions, when substituting an extract I prescribe the equivalent to half a pound. This is not a needless precaution, as I have had relapses in patients who said that they had tired of whole liver and had relied entirely on the equivalent amount of liver as extract. It is possible, of course, that these relapses might have occurred even if they had been taking whole liver, but this is doubtful.

The following case will indicate the undoubted superiority of whole liver over liver extract, at any rate in this particular patient.

CASE V.

A man, aged 29, was treated in hospital for pernicious anaemia, and discharged on September 25th, 1929, with a red blood cell count of 3,000,000 per c.mm. He took one and a half pounds of lightly cooked whole liver per week until the beginning of May, 1930, when he tired of liver and began taking liver extract in amounts equivalent to two and a quarter pounds of whole liver per week. During the time he was on whole liver he felt as well as he ever did; in addition to returning to work he was able to play games. From the middle of May, 1930, two weeks after he had substituted liver extract for whole liver, his appetite began to fail, and increasing weakness and anaemia was noticed. At the beginning of June, 1930, he stopped the extract and tried to take whole liver again, but his lack of appetite prevented him from eating much of it during the ensuing week. He was admitted to hospital on June 10th with a temperature of 100.2° F. and a red cell count of 1,040,000 per c.mm.

He was put on whole liver, half a pound a day, and arsenic, without, it must be admitted, very rapid improvement, and two transfusions were given in the course of the next two weeks before the temperature came down and real improvement set in.

Conclusions.

1. Severe cases of pernicious anaemia with a high temperature either do not respond to liver treatment or they respond very slowly.

2. Severe cases with a temperature often respond well to a blood transfusion, and in some cases it is probably a life-saving measure.

3. Improvement takes place quicker if arsenic is prescribed for cases of pernicious anaemia which are under liver treatment.

4. It is safer not to rely entirely on liver extracts. Whole liver should always be included in the diet in every case of pernicious anaemia.

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ACUTE LYMPHOCYTIC LEUKAEMIA.

RECOVERY AFTER INTRAMUSCULAR INJECTIONS OF HOG SPLEEN.

BY

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LYMPHOCYTIC leukaemia is such a rapidly fatal disease that the following account of a recovery may be of interest. In publishing it I wish to point out that I do so merely in the hope of stimulating the interest of others to try the treatment. The suggestion of using spleen extract was put forward on the grounds of the connexion in the etiology and the pathology of the disease and the imperfectly understood functions of the spleen. Workers with more material at their disposal might experiment with further cases and draw their own conclusions from their results.

A girl, aged 8, was brought to the surgery on February 1st, 1930. Her mother complained that she looked pale and tired. On examination no physical signs could be discovered to account for the child's loss of interest and energy, but there appeared to be slight anaemia. She was put on a simple iron mixture, and was seen at intervals of four or five days.

On February 19th her condition appeared to have become suddenly much worse; she was therefore ordered to bed. On the following day the degree of anaemia was found to be much more severe, and a loud systolic murmur was heard over the whole cardiac area, being loudest in the recumbent position. There was visible pulsation of the carotid arteries. The spleen could not be felt, but the liver was enlarged to one inch below the costal margin. The child had had three attacks of epistaxis, and had vomited that morning.

A blood count made on the following day was: haemoglobin 24 per cent.; red cells 1,940,000 per c.mm.; leucocytes 6,100; and colour index 0.63. The differential count was: polymorphonuclear neutrophils 40 per cent.; polymorphonuclear eosinophils 0.5 per cent.; lymphocytes 57.5 per cent.; large mononuclears 1 per cent.; and neutrophil myelocytes 1 per cent. There was great variation in the size and shape of the red cells. Punctate basophilia was prominent, and nucleated red cells were present.

The child continued to get rapidly worse. She was removed to hospital for further investigation, and a blood count made on March 3rd—that is, only twelve days after the first count—showed the following alarming progress of the disease: haemoglobin 12 per cent.; red cells 856,000 per c.mm.; leucocytes 9,600; and colour index 0.7. The differential count now was: polymorphonuclear neutrophils 7.2 per cent.; lymphocytes 87.2 per cent.; and large mononuclears 1.6 per cent. The red cells showed a great deal of change in the form of anisocytosis and poikylocytosis, polychromaxia, and punctate basophilia. Normoblasts and megaloblasts were now present in percentages of 6.4 and 0.8 respectively. Blood platelets were scanty.

On examination the spleen was found to be still not enlarged, and there was no discoverable enlargement of the lymphatic glands. She was obviously extremely ill, of a pale, yellowish waxy colour, with oedema of ankles and legs; a moderate pyrexia was present. Repeated attempts were made to administer liver extract by the mouth, and a small amount was taken, but it was vomited.

On March 7th the child was too ill to take any notice of anything, and entirely refused food. The next day it was decided to try the intramuscular injection of hog spleen and liver extract alternately. The injections were made into the gluteus medius muscle, and 5 c.cm. of a 40 per cent. albumin-free solution of hog spleen was given. Two days later 1 c.cm. of a 20 per cent. solution

of liver extract was given. These injections were repeated two and four days later respectively.

On March 15th the condition of the child showed definite but slight improvement. Teaspoonful doses of liver extract were tried by the mouth, and were retained. Two more injections of spleen and liver were given at two-day intervals, and then the injection of liver extract was stopped, but the injections of spleen were continued at four-day intervals until ten had been given. The dose of the liver extract given by the mouth was gradually increased, until two teaspoonfuls of the liquid extract were being taken three times a day. The child continued to make rapid and uninterrupted progress.

On April 30th she was looking very well, and was up and running about; all physical signs, including all trace of the cardiac murmur, had disappeared. The liver extract by the mouth had been reduced ten days previously to two teaspoonfuls twice a day. A blood count performed on April 30th showed: haemoglobin 88 per cent.; red cells 6,330,000 per c.mm.; leucocytes 16,200; and colour index 0.7. The differential count was: polymorphonuclear neutrophils 56 per cent.; polymorphonuclear eosinophils 1 per cent.; lymphocytes 41 per cent.; and large mononuclears 2 per cent. The films showed nothing else of note, the condition of all the red cells seen being normal.

The child was seen again on June 26th, when she appeared perfectly well; she had returned to school, and played games with a normal amount of energy, no sign of anaemia being present. The dose of liver extract had been reduced to one teaspoonful twice daily, which she is continuing to take.

In conclusion, I wish to express my thanks to Dr. C. P. Lapage of Manchester for his interest and advice, to Dr. Muir of Halifax, and to the pathologists of Halifax Infirmary and St. Mary's Hospital, Manchester.

HAEMORRHAGIC NON-PUSTULAR SMALL-POX.

BY

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THE case here reported is one of several which clinically and pathologically portray a picture of haemorrhagic non-pustular small-pox occurring in the colony of Hong-Kong. It is interesting to note that most of these cases occurred in pregnant women during the eighth month of pregnancy, and hence gave us serious thought as regards revision of the diagnosis. After very careful consideration of all the facts we feel, however, that we should still stand by our provisional diagnosis.

History.

The Chinese are very reluctant to give facts relating to their indisposition, and hence we are not able to supply fuller details, although we consider the history very incomplete. The patient stated that she was 22 years old, and that on November 23rd, 1929, she complained of pain in the sacrum of a very severe character; she resorted to the Chinese method of thumping the affected part in an endeavour to get relief, but was not successful. Three days later there was fever, and the movements of an eight months foetus were felt; uterine pain was felt resembling that of commencing labour. The lips rapidly became cracked, and sordes developed on the mucous membrane. An aphthous condition appeared on the gums, and ulcerations here and there on the tongue. Soon afterwards there were rigors and cold sweats, with nausea and vomiting; all these signs and symptoms occurred for the first time within a very short period of each other.

The patient said that her condition was due to "kup sik" (fever after sexual intercourse), which had taken place ten days previously. The Chinese have a superstition that a woman in advanced pregnancy may die if she has sexual intercourse with her husband, and state that the condition is allied to a "severe type of pneumonia." There was no cough in spite of the rapid respiration, and there were no convincing signs of pneumonia.

Condition on Admission.

On November 28th, 1929, she sought admission to the Tung Wah Hospital, stating that her eyes had become very sore on the previous day. She had suffused conjunctivae and marked lacrymation. The face was flushed, and the body showed a nodular rash, which was not itchy. It was ascertained that the patient was a primipara, and had only been married in the previous July. She had never had swelling of either the face or the feet. She was vaccinated against small-pox in her native village some time ago; how long ago, and whether the vaccination was carried out correctly or not, could not be ascertained, but there was no clinical evidence of vaccination ever having been performed.

Complaint was made of severe aching of the bones, with great discomfort. Not once during her period of pregnancy had she ever left her bedroom. There was no evident history of syphilis. The faeces were yellow and soft in appearance, and since admission the bowels had been open three or four times daily. No blood or mucus was seen. The urine was a little concentrated, and when passed was said to produce a burning sensation. No albumin was found in a catheter specimen, and the specific gravity was normal. For some time there had been weakness of the legs, but no further history or physical signs of note were obtained.

The patient died in the Tung Wah Hospital on November 30th, and was sent to the Victoria public mortuary, where a post-mortem examination was made by one of us on the following morning.

Post-mortem Findings.

The liver was markedly amyloid, and much increased in size. The left kidney pelvis was full of organized blood clot. The bladder contained no urine; there was slight injection of the mucous membrane. The mesentery showed marked numerous petechial haemorrhages. The spleen was congested, but otherwise normal in appearance. In the intestines, including the colon, there were many circular and irregular oval dark-red or blackish haemorrhages of average size (0.5 cm.) remote from the mesenteric margin.

The uterus contained an apparently normal eight months foetus. The stomach showed large oval dark-red haemorrhages, on the greater curvature chiefly. There were also marked petechial haemorrhages on both the pericardium and epicardium, most marked within two inches of the apex. The lungs were only congested, and the larynx and pharynx were injected, without any evidence of diphtheria or other infection. On the gums there were petechial haemorrhages, no blue line, and no dental caries. The brain and meninges were injected, but there was no evidence of cerebro-spinal meningitis or of any other brain or cord condition.

The breasts were well developed, and contained lacteal fluid; in the fatty areolar tissue there were petechial haemorrhages. The joints showed no evidence of haemorrhages, nor of any abnormality. The pupils were dilated, slightly reddened, and beginning to "sink." The blood vessels were thickened. There was a diffuse purplish rash over the whole of the face, neck, trunk, and part of the upper extremities, but it only extended for two inches below the groin, where it could be distinctly seen to end in a fraying-out of petechial haemorrhages, which penetrated into the subcutaneous tissues. At first sight the distribution on the thighs was like that in scarlet fever. In the pancreas was found an abscess 1 inch in diameter, oval in shape, and well encapsulated; no other abnormality was noted.

DIFFERENTIAL DIAGNOSIS.

The following alternative diagnoses were considered: haemorrhagic small-pox (the purpuric non-pustular type of Tidy); purpura haemorrhagica, and purpura fulminans; severe typhoid fever (no typhoid spleen nor Peyer's patches were evident); Henoch's purpura (age usually 5 to 20 years only); lead poisoning (the macroscopic signs were not present, but there was an appearance resembling bilateral foot-drop; mechanical purpura (possibly caused by venous stasis due to pressure of the foetus); acute leukaemia (no glands were enlarged as would be expected); chloroma (skull examined, but no evidence of green marrow); cerebro-spinal meningitis (the pathology was negative); infective endocarditis with secondary septicaemia; certain forms of toxic nephritis of pregnancy (there was a marked conjunctivitis which required other diagnosis for explanation, since the local condition was considered of general origin); and typhus fever. After a very careful consideration of all the signs and symptoms and post-mortem findings, the differential diagnosis was gradually reduced to one of three conditions—namely, haemorrhagic small-pox of the non-pustular variety, typhus fever, and mechanical purpura. Lead poisoning had been eliminated by examination of all the organs by the Government analytical

chemist, Mr. E. R. Dovey, who also assured us that all other poisons were absent, so far as chemical analysis could show.

As regards the rash, those produced by quinine, belladonna, iodides, etc., were carefully eliminated. Typhus fever was not considered in view of the previously mentioned findings—bearing in mind that the rash never appears on the face in typhus, whereas in the present case there was a marked diffuse haemorrhagic rash, and noting that the spleen was not enlarged, leucocytosis was absent, and marked leucopenia was present, with general anaemia.

The total red blood corpuscles numbered about 2,000,000 per c.mm. The white cell count was constantly about: polymorphs 26 per cent., lymphocytes 73 per cent., and mast cells 1 per cent. No eosinophils were seen at any time, and no malarial parasites were detected.

The possibility of mechanical purpura of pregnancy was excluded on the grounds that there was no evidence of circulatory obstruction at all. Neither the uterus nor the foetus showed anything abnormal.

Microscopical sections were made from various parts of every organ, but all that could be noticed was simple haemorrhagic infiltration of the various organs, and nothing more.

Since one of us is now in England, and can deal with any correspondence, we shall be grateful for any criticisms and suggestions which may throw further light upon these cases.

We wish to take this opportunity of thanking the members of the University and Government staff who so kindly regularly assist us in our investigations.

THE BASIC BLOOD PRESSURE IN RAYNAUD'S DISEASE.

BY

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THE basic blood pressure is that pressure exerted on the blood by the contractile walls independently of the additional pressure due to the systolic contraction of the heart. During estimations of the systolic pressure, when the inflated armlet prevents the systolic pressure from being transmitted beyond the point of application, the blood in the vessels beyond the armlet is under a basic pressure which can be estimated by my method described in the *Journal* of February 8th (p. 242).

After examining a large number of apparently healthy men I find that the normal basic blood pressure is about 50 mm. of mercury. When the second sphygmomanometer points to 70 mm. it is evident that the pressure is too high, and that the cells in the blood are being compressed to an extent which handicaps them seriously in their work. Variation of pressure on the blood disturbs the surface tension, osmotic effects, and metabolic reactions of its cells, and a permanently high figure has a serious action on the cellular actions, reactions, and interactions, with a consequently marked effect on the general nourishment of the body. Furthermore, if the pressure is very high the patency of the vasa vasorum is reduced, and the blood supply to the muscular fibres of the arterial walls is hindered to a serious extent. Under such circumstances it follows that these arterial muscular fibres are poorly nourished and their movements become sluggish. This, I suggest, is the state of things in a patient suffering from Raynaud's disease.

In cases of this disease which I have examined the systolic pressure is high, but the basal blood pressure is raised disproportionately, and I think most stress should be laid on the disproportion. In one severe case of a woman, aged 42, the systolic pressure was 200 mm. and the basal blood pressure 100 mm. This patient's nose and hands were badly affected, and her general health was so interfered with that she could not keep herself warm by the exertion involved in routine work.

My findings are increased in value as a result of the good work by Sir Thomas Lewis and Professor William Kerr, to which reference was made in the *Journal* of July 20th, 1929 (p. 111), and of January 11th, 1930 (p. 82). These observers draw attention to the fact that undue cooling of the hand failed to bring on an attack, because, as they point out, "the minute vessels of the skin of these patients react, as do those of normal skin, to excessive cold by dilating."

I venture to suggest that what really happens is this: in Raynaud's disease the basal blood pressure is high, the blood cell reactions are hampered, and there is a hindrance to the entry of this blood to the vasa vasorum, with the result that the muscle fibres are badly supplied with nourishment and are therefore not able to react satisfactorily to ordinary stimuli. Excessive cold, however, is sufficiently stimulating to make even these sluggish muscular fibres react, and, as Lewis and Kerr state, "the occurrence of a full cyanotic tint is not observed." Their observations, it is interesting to note, have made them come to the same conclusion as I have—that there is an abnormality of the vessel, and also that the closure is not reflex.

I feel inclined to differ from them when they use the term "spasm," which seems to suggest a hypercontractibility of the muscular fibres of the arterial wall. Such a hypercontractibility is not what one would expect to find in a badly nourished muscle, but rather a sluggishness of the movements. As I pointed out in the *Practitioner* of May, 1929; "To suggest that the diseased muscular fibres of the auricle are capable of developing fresh centres of excitation seems contrary to the usual rule of dying matter, whereas on the other hand the diseased fibres forming the thin wall of the auricle lend themselves to be thrown *passively* into a state of tremor." In Raynaud's disease the greater the heat applied within reason, or the higher the temperature of the room, the sooner do the arterial muscular fibres move, with a consequent dilatation, because the general raising of the temperature has helped to reduce the basal blood pressure to such an extent as to allow a freer entrance of blood into the vasa vasorum.

The value of a study of this sort is not so much in connexion with Raynaud's disease itself, since, save for the milder forms, it is a rare complaint, but rather because it helps to emphasize one or two important principles, the first being the importance of a proper blood supply to the muscular fibres of the arterial walls, and, secondly, the blood pressure taken over the arm is not necessarily the pressure *on* the blood in all parts of the body. The greater liability of the coronary arteries to disease is evidence of the fact that the blood supply of their muscular fibres is often inadequate; as a consequence there is a sluggishness of their movements which gives rise to many of the abnormal contractions of the heart. It is fairly obvious and easily understandable that, owing to the powerful contractions of the heart muscle, the pressure in the coronary arteries must be the highest of all.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE SAUERBRUCH-HERRMANNSDORFER-GERSON DIET.

THIS subject is in the forefront of medical interest and discussion in Germany at the present time, and there are many large institutions in which a special kitchen has been provided for the nutrition of patients on these lines. The work of Sauerbruch and Herrmannsdorfer extends over a period of five years; that of Gerson has been still longer. It is advisable to point out that the claims made by Sauerbruch and Herrmannsdorfer refer to the treatment primarily and mainly of surgical tuberculosis—that is of cases of lupus, and tuberculosis of the skin and bones as well as of the lungs. Stated shortly, these claims are largely the results of observations made by Herrmannsdorfer as to the influence of diet in the healing of wounds, and of the special value of the salt-free diet, and a diet

rich in vitamins supplemented by special medicinal preparations, in influencing the reactions of the tissues in a manner favourable to a normal healing process.

Gerson is of opinion that the nutritional state of the tissues—the constitution—can be profoundly influenced by a dietetic regime in which the essential points are summarized as follows: (1) the withholding of common salt in the dietary with the administration of an almost chloride-free diet; (2) a high vitamin content in the dietary, into which fresh vegetables and fruits largely enter; and (3) the administration of special mineral salts—mineralogen—prepared from the vegetable kingdom, and an additional vitamin in the form of a special phosphorized cod-liver oil preparation.

The Dietary System.

The essentials in the diet system are as follows: (1) the all but complete exclusion of sodium chloride (Herrmannsdorfer), salt being entirely excluded in the Gerson regime, and a halogen-free vegetable kitchen salt preparation—eugusal—being used as an effective substitute; (2) fresh uncooked vegetables and fruits bulk largely in the diet, either in the form of vegetable extracts prepared by pressing uncooked vegetables, such as carrots, beet, spinach, turnips, or in the form of salads, with fruit juices similarly prepared by pressing and straining; (3) marked restriction in the amount of fresh meat foods, 600 grams weekly being allowed in Herrmannsdorfer's system, while Gerson allows meat once or twice weekly; (4) one pint or more of fresh uncooked milk daily, sour milk, eggs (especially yolks), oatmeal, wholemeal bread, and farinaceous foods in restricted amounts; and (5) various spices are used to increase the flavour of the dishes. The regime also includes two medicinal preparations:[1] mineralogen, a special blend of mineral salts of vegetable origin, and a phosphoric acid cod-liver oil preparation, both being administered three times daily.

If care is taken, an entirely adequate, palatable, daily dietary can be prepared. At the conclusion of the treatment the patients get back gradually to a more conventional regime, which, however, still comprises the greater use of fresh vegetables and fruits and a judicious restriction of meat foods.

CHALMERS WATSON, M.D., F.R.C.P.Ed.,
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MENINGITIS IN A BREAST-FED BABY.

THE interesting feature of the case recorded below is the source of infection. The child had been entirely breast-fed, and had been perfectly well since birth. The father and mother and eight other children are all well, and apparently free from infection. The only history of tuberculosis that could be obtained was that the former occupant of the house had died of phthisis on June 29th, 1926, but as this was three years before the birth of the baby it is unlikely that it is of any significance.

John R., aged 9 months, was admitted as a case of bronchitis. Temperature was 100° F., respiration 40, and pulse 120. There were scattered moist sounds over the posterior aspect of the chest. He was pale and rather listless, but he took his feeds well, and on the morning of the third day his temperature had returned to normal. It rose again that evening to 100°, and he took his feeds rather unwillingly. The next morning he was drowsy, but there were no definite symptoms; the chest had improved; the abdomen was full and soft, and not tender on palpation; there was no head retraction, and no vomiting had occurred.

On the following day he was very drowsy. Examination revealed that he had a hemiparesis of the left side; the left side of the face was immobile when he cried, and his arm and leg were flaccid. The eyes were examined, but there was no papilloedema, the discs being paler than normal. On the sixth day he had three convulsions, and a lumbar puncture was performed; 16 c.cm. of an opalescent fluid was obtained and examined by the pathologist to the hospital. He reported that the cellular content was almost entirely polymorph in character, and only a few lymphocytes were seen. Despite the unusual cell count, ten tubercle bacilli were found, all in one small group.

I would like to thank Dr. Armstrong for his permission to publish this case, and for his kind assistance.

D. M. ALCOCK.

Liverpool Children's Hospital.

[1] *Pharma.* Max Loebinger and Co., Charlottenburg, Berlin.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

DORSET AND WEST HANTS BRANCH.

The Problem of the Care of the Neurotic Patient.

IN a paper read at a meeting of the Dorset and West Hants Branch, on July 2nd, Dr. J. A. PRIDHAM pleaded for a more scientific and rational investigation and treatment of patients suffering from neurosis or psychosis, partly for the sake of the patient, and partly for the credit of the medical profession.

Dr. Pridham remarked that these patients wandered from doctor to doctor and to every variety of unregistered practitioner, spending fortunes on patent remedies. With each doctor they might acquire a new diagnosis and treatment; they might also be subjected to unnecessary operations and to other useless procedures, and not unnaturally they turned way in disgust from the orthodox physician. It might easily happen that some quack or some patent remedy relieved the particular trouble; this "cure" was then proclaimed abroad, and the credit of the profession suffered accordingly, the fact that new symptoms shortly appeared not affecting the position. Such patients had frequently been labelled as suffering from organic disease, and in this way certain methods of treatment, orthodox or not, had gained spurious reputations. The power of suggestion strongly affected this type of individual, and any form of treatment might produce good results if it utilized this power. The public should not be blamed for resorting to persons outside the orthodox ranks, since so many doctors would have nothing to do with a patient when once a diagnosis of neurosis had been made. In too many cases the patient realized that he was regarded as a malingerer, or despised as a poor sort of creature.

Dr. Pridham recalled that, when a student at hospital, he attended one afternoon the out-patient department of a certain physician who was justly believed to be clever and competent. An old woman came haltingly up the room, and the students were asked to observe her peculiar crippling gait, which the physician pointed out was not characteristic of any known disease, and was in fact hysterical. The patient was dismissed, and we were left with the impression that she was not a sick person needing relief, but someone to be laughed at, and anyway quite outside the scope of medicine. Yet this old woman had travelled hopefully to the hospital, expecting to be cured of what was to her a serious disability. The speaker expressed the view that this unreasonable attitude of mind was the result of the reaction of medicine from the centuries of ignorance and of the blind acceptance of unsound theories. With the renaissance of science, theories had to be based on observations of fact. The scientific physician learned that he must found his study of disease on the facts of anatomy, physiology, and pathology. He was far too occupied with these studies to be able or willing to be interested in maladies that revealed no trace of organic origin; in fact, he did not regard them as maladies at all, but rather as a peculiar form of amusement of the patient. This opinion was often only slightly veiled, and it was hardly surprising that the patient thought little of the orthodox healer. This mental attitude still persisted among a large number of doctors. Another source of error was the battle which still raged between the somatists or mechanists and the psychologists. The former maintained that all disorders, including the neuroses, were due to organic disease, known or unknown. It could be admitted that a sound mind was unlikely to exist in an imperfect body, for the imperfection of the body might prevent the normal development of the mind, or it might prevent the mind from functioning naturally. But the opposite argument also held good—namely, that a diseased mind might harm a sound body. A ship might be commanded by a capable captain, but if it was badly constructed the most capable captain might be unable to prevent disaster; on the other hand, a good ship commanded by a fool might go on the rocks.

Whether or not the mind or spirit was a mere function of the brain was a question for metaphysicians; what was pertinent was the fact that a particular mind might function well or ill apart from any change in bodily structure. The acknowledgement that organic disease might produce results analogous to the neuroses did not prove that a neurosis could not exist apart from organic disease. It might be that in future years pathologists might be able to demonstrate definite structural changes peculiar to the neuroses, but these would be the result of, and not the cause of, the ailment. As R. G. Gordon had pointed out, habits of thought or behaviour might be revealed in patterns of the neuronic cells. The practical point was that the neuroses could only be understood and treated if they were approached as diseases of the mind. This devotion to the theory of the organic origin of the neurosis had unfortunate consequences; such patients were subjected to every possible refinement of physical examination—a matter of much waste of time and energy. The radiographer, biochemist, pathologist, and surgeon were all called in to aid. Knowledge of the limits of the normal was so incomplete that as a rule this exhaustive examination revealed something amiss, and treatment could be directed to its cure; this might be successful, but the patient remained ill! In this way sound methods fell into disrepute, and unsound ones gained spurious reputation.

When all investigations had been made, and all treatment had failed, a diagnosis of neurosis might be made by a process of exclusion; but, fortunately, there was a better way. The history of the patient was of primary importance. Unless a patient had a psychogenic history, a diagnosis of neurosis should be avoided, for nobody became neurotic suddenly with no previous history pointing to this type of disorder. Again, the neuroses had positive signs as well as merely negative ones. To take one instance only, in a case of hemiplegia the observer should place his hands under the patient's heels and asked him to raise each in turn. If the paralysis was due to organic disease the paralysed limb would lie limp on the hand, but if it was a case of hysterical hemiplegia the paralysed limb would not only fail to be raised, but the heel would be felt to be pressed strongly down. All sick persons might usefully be divided into three primary classes: those suffering from organic disease which was the cause of all their symptoms, the effect on the mind being entirely secondary; those suffering from an organic disease and a neurosis, when either disease might be cured without material amelioration of the other; and those suffering from a neurosis alone. If this possibility of a neurosis, either alone or associated with other disease, was kept in mind, many a baffling problem would be resolved, many a mistake would be prevented, and the physician would be reminded of the great importance of using good suggestions and avoiding bad ones.

The examination of any patient who might be neurotic must be carried out with more than ordinary care. A complete physical examination was necessary, since there was no natural law which shielded a neurotic from cancer or any other illness, and an apparent neurosis might be the earliest symptom of pulmonary tuberculosis or of arteriosclerosis. In addition, the physical examination gave the opportunity of gaining the patient's confidence, an essential condition of success. When a diagnosis of neurosis had been made, the origin of the condition must be sought; this would require exemplary patience, a wide knowledge of humanity, and familiarity with psychological principles and methods, including psycho-analytic procedure and hypnotism. The time necessary for discovery might range from a single interview to a series extending over a year. The simplest case, which was encountered every week, was the patient who had a phobia that some symptom portended serious disease; if he could be assured that the symptom was of no importance he was cured. At the other end of the scale was the patient who required an entire re-education and readjustment. It might happen, as in other branches of medicine, that no final cure could be effected, but it was rare indeed that the condition could not be ameliorated, and in such cases a real service was given in that the patient was prevented from wasting his money and time, as well as that of others, by flitting from doctor to doctor, and to every variety of cult or patent remedy. Moreover, the credit of the profession was preserved.

The recovery of the neurotic patient was very largely bound up with the discovery of the origin of his neurosis. Whether or not the origin was detected, treatment would be directed towards readjusting and re-educating the patient. Use might have to be made of "suggestion," with or without hypnosis; this powerful remedy was used, consciously or unconsciously, by every doctor with every patient, yet it was apparently despised by a large section of the profession. While affecting to ignore it, there was no hesitation in ascribing to its use all the apparent cures of the quacks and miracle workers. Was it not time that the uses of this most effective agent were scientifically examined?

Dr. Pridham then cited a few illustrative cases.

A girl, aged 20, suffered from a spasmodic jerk which occurred on slight stimulus; after an attack of influenza the spasm became so marked that she was unable to return to work. After two or three interviews Dr. Pridham ascertained that she was unable to get on with her employers, who were three maiden ladies of peculiar temperament; these ladies were relations, and the patient's parents were averse to her leaving them. He interviewed the parents and the girl was allowed to change her employment; the spasm disappeared, and though he took steps to elicit a recurrence, by giving her a slight fright at the next interview, there was no such result.

This case of hysteria or conversion neurosis served as an example of the "flight into sickness" by which such patients resolved their difficulties. The situation was explained to the parents, and now, some seven years later, there had been no recurrence of the hysterical symptoms. Another well-known instance of this method of meeting troubles was the case of the soldier suffering from hysterical paraplegia. The paralysis solved the dreadful problem of the intense desire to flee from danger, and the equally intense desire not to disgrace himself or his regiment.

A woman, aged 30, was sent from an adjoining county suffering from "colitis"; she had been in bed for many weeks with a trained nurse in the house, and brought an elaborate series of charts and notes with a carefully constructed diet scheme. Dr. Pridham ascertained that there was no organic bowel disease; he found that the colitis was a term applied to excessive peristaltic action which was easily influenced by emotion; the patient's motions followed her emotions. In a week she was on ordinary diet, was up all day, and went out one evening to a dance. The treatment included the explanation of the rationale of the colitis and reassurance as to its significance, after which it was entirely ignored. It soon became evident that she required a complete re-education for her permanent cure. Unfortunately after two months she had to return to her home, which was the source of her disability, and four months later she relapsed.

A woman, aged 60, came to be cured of alcoholism; she had had previous breakdowns and had been treated in a home many years before. Suggestion treatment under light hypnosis was given on about five occasions; the patient became an abstainer and had remained so for seven years.

A married woman, aged 70, suffered from acute headaches for more than thirty years. These headaches were so acute and so unresponsive to treatment that twenty years previously she had consulted the late Sir Victor Horsley, who trephined her. Ten years later another doctor injected the occipital nerves with alcohol. Thus two competent men had been impressed with the severity of the pain, and had believed it to be due to organic disease. Dr. Pridham formed the opinion that a neurosis was present. He had been sent for one day, and had found the patient in bed in acute agony; she had lost self-control, and begged to be allowed to die. He applied light hypnotism, when she fell asleep in a few minutes and remained asleep for several hours. At her request further treatment was given by suggestion, and her headaches did not recur in a severe form for several years.

Dr. Pridham remarked that the last two cases were instances of treatment by light hypnosis. In the first instance it was noteworthy that as the alcoholism was cured the underlying neurosis became obvious. In conclusion, he suggested the possibility that neurosis was the correct diagnosis in many an obscure case, and that modern psychological methods could cure, or at least ameliorate, the condition of these patients. The credit of an honourable profession was very definitely involved in the way they were handled.

Reviews.

FAITH AND SCIENCE IN SURGERY.

LAST May, when congratulating Sir JOHN BLAND-SUTTON on his seventy-fifth birthday, we expressed a hope that we might have further proofs of his ability to charm us. One such proof has lately come to hand in a reprint of ten addresses, *On Faith and Science in Surgery*,[1] delivered in the lustrum 1925–30 in various cities of Great Britain and Canada, re-edited and freely illustrated with wood engravings. Some part of these have already appeared in our pages with some of the woodcuts which adorn them, but they are none the less welcome in their present form. Sir John has not only the faculty of presenting new facts attractively; he has the power of seeing long-known facts from new points of view, and of shaking the reader's complacency by reminding him of gaps in his knowledge and of defects in his surgical equipment. Like Mr. Silas Wegg (in this respect alone), he has a habit of "dropping into poetry" and of driving home some of his arguments and aphorisms with rhymes, such as those in the Mitchell Banks Lecture of 1925. He is by no means satisfied with catgut for sutures or ligatures, for he lays it down as an axiom that "no material should be employed that cannot be sterilized by heat without destroying its efficiency," and also, "surgeons still require a reliable ligature." Perhaps the procedure of Gallie, commended by Sir John Bland-Sutton, may satisfy the counsels of perfection by employing strips of the patient's own fascia as ligature and suture materials. The surgeon might at any rate have the satisfaction in such cases of throwing the blame on the patient for any failures of material.

"To operate for acute cholecystitis and not remove the gall-bladder is as reprehensible as operating for gangrenous appendicitis and leaving the appendix." Thus does the author sum up his lecture on faith in drugs, in which he prescribes "Attic salt for gall-stones." Yet how shall we expect the layman to realize the facts when, as Sir John relates: "In 1894 a medical student submitted to cholecystotomy for calculus obstruction: the fistula has been discharging mucus and bile to the present time—thirty years. This man clings obstinately to his gall-bladder, and has used more than a ton of cotton-wool for absorbing the escaping bile." The article on conjoined twins and monstrosity and its illustrations are attractive, and that on the parasitic origin of man is most instructive and impressive from its clear simplicity of statement of profound truths. The addenda remind us of the author's pioneer work on avian tuberculosis, and to some ancient instances of couching for cataract. We must not conclude without commending the illustrations. In these days clear woodcuts are most refreshing, and in particular such illustrations as those of the wonderful nest of a tailor-bird or the quadruplets from an armadillo.

There is much virtue in these one hundred and nine pages.

LECTURES ON BIOLOGICAL MEDICINE.

As representing the medical revival in Italy nothing could be more appropriate than the volume of Lectures on Biological Medicine,[2] edited by Professor MARTELLI of Naples. Professor Martelli is the editor of the "Medical Renaissance," and the present volume contains a number of carefully chosen articles by various distinguished representatives of Italian medicine which have appeared in that periodical during the last few years. The result is a volume bearing some resemblance to the well-known work of Trousseau, with the addition of certain artistic features which mark its Italian origin. Most of the articles deal with familiar subjects, such as appendicitis and typhoid fever, and need not be enumerated; but Professor Martelli has contributed an original article on the new horizon in medical biology, which is of particular interest at the present time. He pictures the various stages which modern medical science has traversed, beginning with the anatomical period iniated by Morgagni, culminating in the cellular pathology of Virchow. This stage passed away when it was realized that the study of the corpse alone, although indispensable, failed to give an explanation of the genesis of disease—an essential to successful treatment. The discoveries of Pasteur, with their revelation of the immense world of the infinitely little, ushered in the etiological period. So great at the time was the enthusiasm aroused by bacteriological research, that the body itself tended to drop out of view, but when the enthusiasm declined somewhat it was discovered that these parasites alone offered no sufficient explanation of disease—that they might be present without causing disease, and that in epidemics not every exposed individual became infected. The existence of a definite receptivity or constitution was recognized, "our Giovanni" being a pioneer in the movement. Thus was introduced the modern pathogenic period with its elaborate technique. The point of Professor Martelli's argument is that a further stage has to be reached before the final aim of medicine—namely, that of prophylaxis, can be attained. Present knowledge and clinical acumen too often end merely in the contemplation of the results of disease. Such conditions as pulmonary cavitation, hepatic cirrhosis, and sclerosis of the spinal cord, for example, are not, he contends, diseases, but the results of disease and evidences of the failure of the body in its contest with pathogenic agents. It is futile merely to contemplate, like Marius among the ruins, the havoc produced on the body. The author perceives an early stage of variable duration in different diseases, during which the healthy organism is struggling against the settlement of the pathogenic agent within it. It is to this, the prepathogenic stage, that research should be directed as affording the best hope of discovering the means of successful prophylaxis. He has himself studied the signs and symptoms of this stage in connexion with certain diseases, and he has endeavoured, in his teaching, to demonstrate that, in the case of leukaemia, for example, it is quite possible to recognize them. He recommends investigators to concentrate their attention on what Héricourt has called these "frontiers of disease."

TREATMENT OF CHRONIC ARTHRITIS.

DR. DOUTHWAITE, in his volume on *The Treatment of Chronic Arthritis*,[3] has admirably answered the purpose of Messrs. Jonathan Cape's Modern Treatment Series. The book is clear, concise, and simply expressed—just what the general practitioner requires for ready reference. Three points call for particular commendation: first, his insistence that osteo-arthritis is primarily a degenerative condition, and that infective conditions are of entirely secondary importance; secondly, his definition of rheumatoid arthritis as a general infection on a rheumatic diathesis distinguishing it from those cases which are due to the direct influence of focal infection; thirdly, his insistence that the good effects of spa treatment are due more to general regime and/or to some hitherto undertermined factors than to minute differences in chemical composition of waters. While on this subject a word of criticism may be ventured that of the three conditions discussed—osteo-arthritis, rheumatoid arthritis, and gout—rheumatoid arthritis is said to be benefited by spa treatment, while this treatment is not mentioned in the case of osteo-arthritis, and in the case of gout is referred to only to be dismissed. Most of those who practice in spas would probably claim really good results in the relief (though not the cure) of osteo-arthritis, and marked success in cases of chronic gout, while they would hesitate to claim anything like the same effects in rheumatoid arthritis. Dr. Douthwaite is properly severe on the exploitation of vaccine treatment in these conditions, but he gives definite, logical, and well-considered regimes for each of the pathological syndromes

[1] *On Faith and Science in Surgery.* By Sir John Bland-Sutton, Bt. London: W. Heinemann (Medical Books) Ltd. 1930. (Demy 8vo, pp. xii + 109; 40 figures. 7s. 6d. net.)

[2] *Lezioni di Medicina Biologica.* Dettate per *Rinascenza Medica* e raccolte da C. Martelli. Napoli: *Rinascenza Medica.* 1930. (Sup. roy. 8vo, pp. xii + 548; 16 plates, 32 figures. L. 80.)

[3] *The Treatment of Chronic Arthritis.* By A. H. Douthwaite, M.D.Lond., F.R.C.P. The Modern Treatment Series. London: J. Cape. 1930. (Cr. 8vo, pp. 127. 5s. net.)

under discussion. Above all, he lays stress on the important fact that, given patience and care on the part of the physician, and much fortitude on the part of the patient, really good results may be obtained.

MENTAL HYGIENE.

Foundations of Mental Health[4] is a translation of the last published book of the late Professor LEONARDO BIANCHI. The author was not only a psychiatrist of the highest eminence, but also a statesman, who, as Minister of Public Instruction in Italy, was entrusted with the direction of the educational affairs of his country, and continued up to the end of his life to exert a profound influence in matters concerning the health and welfare of the community. The last work of this eminent clinician and scientist on what is perhaps one of the most important medical and social problems of the present day—namely, the mental health of the race—will naturally be read with interest by English-speaking readers; for while, as Dr. Francis X. Dercum observes in an introductory note, this book is written from experience based upon a study of Italian people, the problems considered are those which are presented by all other races and nations. In successive chapters Professor Bianchi discusses the conditions in which human beings are generated, including the laws regulating heredity; the conditions in which infancy is developed, with special regard to weak constitutions and anomalies of character; the school period; the value of physical, moral, and sex education; criminality and its causes; the general unfavourable conditions in which national groups are living; habits threatening health, as alcoholism; the conditions favouring diffusion of diseases disastrous to individuals and to family life, as syphilis; and the causes of the enormous increase of mental diseases and their remedial measures. This book is written with vigour and courage, and Professor Bianchi does not shrink from denouncing errors or weakness in the Church, in the educational system, or in the habits of the people. In the sphere of morals he counsels restraint and self-denial, and in that of religion the necessity for the educationist to explain the perfect agreement between the moral content of the Christian religion and the naturalistic interpretation of the universe.

TAYLOR AND POULTON'S "MEDICINE."

THIS well-known *Practice of Medicine*[5] is now in its fortieth year, for in 1890, four years after the appearance of the much larger *Principles and Practice* of Hilton Fagge, the late Sir Frederick Taylor brought out the first edition of a book which by the piety of his successors still perpetuates his name, and by its size and detail contrasts with the conjoint *Textbook of Medicine* (1929), edited by Dr. J. J. Conybeare, yet another member of the great school of Guy's Hospital. Since the thirteenth edition in 1925 Dr. POULTON has made many changes and additions, but by judicious pruning of the text has kept the volume of practically the same size. The difficulty that one man must feel in covering the whole ground of medicine is ever increasing, and in this edition Dr. R. D. Gillespie becomes responsible for a new section on mental diseases, and Dr. Dyce Sharp has revised and largely rewritten that on tropical diseases, in which those due to parasitic worms are now included. There is a new article on chronic gastritis, in which the view is taken that in the absence of severe anaemia or of gastric carcinoma a persistent achlorhydria points to chronic gastritis. A great deal of new knowledge has of course been incorporated—for example, the liver treatment of Addisonian or glossitic anaemia, J. W. McNee's classification of the forms of splenic enlargement associated with anaemia, and in Dr. H. W. Barber's account of cutaneous diseases. A noticeable feature of the volume is the number of excellent radiograms, and it is a matter for pleasant surprise that the cost of this valuable book has been actually reduced since the last edition. The amount of work devoted to this edition, even allowing for the editor's generous acknowledgments of help from others, must have been enormous, and the result is certainly most successful.

NURSERY MANAGEMENT.

PROFESSOR MARION L. FAEGRE and JOHN E. ANDERSON, director of the Institute of Child Welfare, University of Minnesota, have collaborated to produce an interesting little book on *Child Care and Training*.[6] Attention of late years has been much directed to the care of the pre-school child, and more and more emphasis is laid on the results of early training, not only in the adaptation to life of individual children, but in the development in all children of what is often called "character." The character is less the outcome of heredity than of environment is one of the points stressed in this book, and parents are repeatedly urged to provide the atmosphere which will develop the most useful tendencies in their children. This is not an easy matter for most adults, who may find themselves humbly lacking in the serene and omniscient qualities that appear to be essential for the perfect parent. But the authors of this book are at pains to describe possible errors and to offer examples of suitable modifications of behaviour of the parents. The early acquisition of good habits in eating and sleeping, coupled with a bond of trust between children and parents, makes a good basis for later management. Chapters on play and books and reading are written with great insight into the point of view of the child, and there is an interesting discussion of the development and proper guidance of curiosity. The book as a whole embodies a review of modern ideas on child guidance.

In *The New-born Infant*[7] Dr. EMERSON L. STONE offers an amplification of a series of lectures given to fourth-year medical students. As he justly points out, there is a gap in the supervision of the newly born child between the time when the obstetrician loses sight of the case and the time when the infant is first taken to a paediatrician or a welfare clinic; yet in the first few weeks of life bad habits may be formed, and serious digestive or other disturbances may arise, which might be avoided by careful management from the outset. Such management he outlines in the book, discussing diverse views held on many points of treatment, and indicating his own preference in each case. The first chapter deals with the immediate care of the newly born child, including the treatment of asphyxia; Dr. Stone, while deprecating the use of violent forms of artificial respiration, approves mouth-to-mouth breathing and the use of hot and cold baths. Passing on to the nursing of the normal infant the author gives useful advice on the care of the child and the establishment of regular habits in feeding, sleep, and excretion. A chapter on dietary disorders of infancy, grouped under symptomatic headings, is well arranged and contains valuable information briefly set forth. The remainder of the book is devoted to birth injuries, disorders and diseases of infancy, and the management of the premature child. The arrangement throughout is clear and concise, and the book should be useful to those who are concerned with the early care of children.

Modern Babies and Nurseries,[8] by MRS. LEN CHALONER, is intended primarily for the use of the mother. It gives in a clear and attractive manner much practical advice on the management of children both in infancy and early

[4] *Foundations of Mental Health.* By Leonardo Bianchi. Authorized translation from the first edition of *Eugenica, Igiene Mentale, e Profilassi delle Malattie Nervose e Mentali.* By G. A. Barricelli, M.D. With an introduction by Francis X. Dercum, M.D. New York and London: D. Appleton and Co. 1930. (5½ × 8½, pp. xvi + 278. 10s. 6d. net.)

[5] *Taylor's Practice of Medicine.* Fourteenth edition. By E. P. Poulton, M.D., F.R.C.P., with the assistance of C. Putnam Symonds, M.D., F.R.C.P., H. W. Barber, M.B., F.R.C.P., and R. D. Gillespie, M.D., M.R.C.P., D.P.M. London: J. and A. Churchill. 1930. (Roy. 8vo, pp. xvi + 1074; 64 plates, 103 figures. 28s.)

[6] *Child Care and Training.* By Marion L. Faegre and John E. Anderson. Revised edition. Minneapolis: University of Minnesota Press. 1929. (5¼ + 8¼, pp. vi + 274; illustrated. 2 dollars.)

[7] *The New-born Infant.* By Emerson L. Stone, M.D. Philadelphia: Lea and Febiger. 1929. (5¼ × 8, pp. xii + 183. 2 dollars net.)

[8] *Modern Babies and Nurseries.* By Len Chaloner. With an introduction by Sir Gilbert Barling, Bt., M.B., F.R.C.S. London: Milford, Oxford University Press. 1929. (Pott 8vo, pp. viii + 122. 2s. 6d. net.)

childhood. There is much sound information, based on experience, in the chapters on nursery furnishing and labour-saving devices, and in a later chapter some suggestions on a subject rarely treated—the conduct of a seaside holiday. The book is conveniently small and attractively written.

THE ACTION OF MUSCLES.

THE first edition of Sir COLIN MACKENZIE's small volume on *The Action of Muscles*[9] was reviewed in our pages twelve years ago. The initials "A. K." at the end of the notice testified at once to the importance of the book and to the value of the opinions expressed by the reviewer. Sir Colin Mackenzie took up the work which was interrupted by the early death of Charles Beevor, whose Croonian Lectures, delivered at the Royal College of Physicians, revealed a wealth of observation and of acute deduction therefrom. The new edition now under notice differs *little* from the old, the principal addition being a special section dealing with the erect posture. But to the practitioner the value of this book depends mainly upon the chapters upon re-education and that coaxing of paralysed muscles to resume their functions with which Sir Colin Mackenzie made such an impression in the military orthopaedic hospitals during and soon after the war. We have no doubt whatever that this second edition will be as quickly sold out as was the first one.

NOTES ON BOOKS.

The Clinical Pathology of Thoracic Puncture Fluids,[10] by Dr. S. ROODHOUSE GLOYNE, is a book that should prove of value to laboratory workers who have no special knowledge of chest conditions. After describing the anatomy and physiology of the pleura, including an account of the lymphatic vessels, the author discusses the pathogenesis of pleural effusions, paying particular attention to the development and location of adhesions. The technique of exploratory puncture is next considered, and this is followed by a straightforward description of the simple physical, chemical, cytological, and bacteriological methods of examining the fluid withdrawn, together with an interpretation of the findings. Considering the small size of the book the cost is perhaps rather high; this is, no doubt, to be ascribed to the inclusion of a coloured plate and a number of photomicrographs, which incidentally add but little to the clarity of the text. A future edition might well include one or more differential tables giving the main properties of those fluids that are most commonly encountered.

We have received the fifth volume[11] (Herzkrankheiten II–Krebsforschung) of the new German Dictionary of Practical Medicine, edited by Professors GEORG and FELIX KLEMPERER, of which the preceding volume was published earlier in the year (see *Journal*, February 15th, p. 291). The twenty-eight articles, all by well-known authorities, are as follows: diseases of the myocardium and cardiac nerves (continued), by Professor W. H. Veil of Jena; hay fever, by Dr. H. Petow of Berlin; Hirschsprung's disease, by Professor R. Mühsam and Dr. E. Mühsam of Berlin; diseases of the testis and hydrocele, by Professor B. O. Pribram of Berlin; mountain sickness and aviators' sickness, by Professor A. Loewy of Davos; homoeopathy, by Professor Georg Klemperer; hydrocephalus, by Professor R. Henneberg of Berlin; hydrotherapy, by Dr. Georg Hauffe of Wilmersdorf; hypnosis, by Professor J. H. Schultz of Berlin; diseases of the hypophysis, by Professor C. Hegler of Hamburg; hysteria, neurasthenia, and neurosis, by Professor K. Hansen of Heidelberg; icterus, by Professor H. Eppinger of Freiburg; impotence, by Professor P. Fürbringer of Berlin; infection and immunity, by Professor H. Hetsch of Frankfort; influenza, by Professor N. Ortner of Vienna; inhalation treatment, by Professor Seyderhelm of Frankfort; whooping-cough, by Professor W. Birk of Tübingen; the feeding of children, by Professor A. Schlossmann and Professor A. Eckstein of Düsseldorf; Little's disease, by Dr. E. Haase of Berlin; poliomyelitis, by Professor J. Zappert of Vienna; tuberculosis in children by Professor St. Engel of Dortmund; climate and climatotherapy, by Dr. M. van Oordt of Sonnenhof; deformities of the knee and hip-joint, by Dr. O. Stracker of Vienna; constitution, by Professor T. Brugsch of Halle; headache, by Professor F. Hartmann and Dr. E. Hofmann of Graz; cosmetics, by Dr. A. Joseph of Berlin; spasms, by Professor P. Schuster and Dr. H. Pineas of Berlin; and investigation of cancer, by Professor F. Blumenthal of Berlin.

The student of bacteriology as a pure science will find his subject admirably set out in Morrey's *Fundamentals of Bacteriology*.[12] The medical reader will not fail to find much in it that is of great interest, but he may be struck by the apparent neglect of things medical. For the bias of the book (as befits the word fundamental) tends rather towards the general than to the particular, and although the physics and chemistry of bacterial life is surveyed very ably, it may be suggested that for teaching purposes the appreciation of the general principles described might be more keenly appreciated if particular instances were adduced more fully. As a theoretical account of the subject the manual has much to recommend it, but it is for the student who has already made some practical acquaintance with bacteria. The preparation of media, the standardization of their reaction, and the technique of sterilization are of course dealt with fully, and from the laboratory point of view. Perhaps a strict adhesion to the title brings it about that there is no systematic account of such organisms as the *C. diphtheriae* or the *Eberthella* group, and the essence of serological reactions is given less from the practical than from the theoretical standpoint. The history of bacteriology is interestingly sketched, and the large part played in its growth by the study of pathogenic organisms is given its due place. The didactic attitude of the volume is reflected by the superabundance of italics and inverted commas, whose frequency is apt to destroy their object. Illustrations and indexing are good. For the student of general bacteriology the book is certainly well suited.

Among the papers included in the *Transactions of the Medico-Legal Society*[13] for the session 1928–29 is an account of the causes and symptoms of status lymphaticus by Dr. Godfrey Carter; an acute analysis by Dr. F. J. McCann of the duties of the doctor to patients mortally endangered by criminal abortion; and a sympathetic study of juvenile delinquency by Dr. Weatherly, who emphasized the importance of first determining the cause of antisocial behaviour. The most closely argued debate was evidently that in which Lord Riddell and Dr. McCann as protagonists discussed the subject of the sterilization of the unfit; and opinion was sharply divided on most points. Other papers—none of them without some incisive quality—dealt with fume diseases, firearm injuries, and acute arsenical poisoning. Dr. Temple Grey gave an instructive account of the medico-legal expert in France.

The thirty-eighth edition of *The Annual Charities Register and Digest*[14] shows the care and assiduity in compilation which has distinguished the previous editions of this established work of reference. As a practical handbook for social students, and as a convenient, though comprehensive, guide for those who are interested in philanthropic activities, it continues to provide in a handy classification much concise and illuminating information of the means by which distress in affliction and sickness is relieved—in hospitals, homes, and special institutions. An elaborate appendix deals with benevolent institutions, friendly societies, and trade societies, and contains a miscellaneous section in which details are given which will be of general use to hospital almoners.

[9] *The Action of Muscles.* By Sir Colin Mackenzie, M.D., F.R.C.S., F.R.S.Edin. Second edition. London: H. K. Lewis and Co., Ltd. 1930. (Demy 8vo, pp. xvi + 288; 100 figures. 12s. 6d. net.)

[10] *The Clinical Pathology of Thoracic Puncture Fluids.* By S. Roodhouse Gloyne, M.D., D.P.H. London: J. Bale, Sons and Danielsson, Ltd. 1930. (Demy 8vo, pp. vii + 83; 8 figures. 10s. 6d. net.)

[11] *Neue Deutsche Klinik.* Herausgegeben von Professor Dr. Georg und Felix Klemperer. Fünfter Band. Berlin and Vienna: Urban und Schwarzenberg. 1930. (Sup. roy. 8vo, pp. iv + 788; 187 figures, 2 plates. Paper cover, R.M.33; bound, R.M.40.)

[12] *The Fundamentals of Bacteriology.* By Charles Bradfield Morrey, M.D. Fourth edition, thoroughly revised. Philadelphia: Lea and Febiger. 1929. (5¼ × 8¼, pp. xiii + 347; 175 figures, 6 plates. 3.50 dollars net.)

[13] *Transactions of the Medico-Legal Society, 1928–29.* Jointly edited by Gerald M. Slot, M.D., M.R.C.P., D.P.H., and Everard Dickson. Vol. xxiii. Cambridge: W. Heffer and Sons, Ltd. 1930. (Demy 8vo, pp. xxvii + 183; illustrated. 12s. 6d. net.)

[14] *The Annual Charities Register and Digest.* Thirty-eighth edition. London: Longmans, Green and Co., Ltd., and the Charity Organization Society. 1930. 5½ × 8½, pp. viii + 553. 8s. 6d. net.)

PREPARATIONS AND APPLIANCES.

METALIX-PORTABLE X-RAY TUBES.

DURING the last three years we have frequently mentioned the "metalix-portable" *x*-ray apparatus, manufactured by Philips Lamps Limited (145, Charing Cross Road, W.C.2), which aroused considerable interest at the trade exhibition held in connexion with the British Medical Association's Annual Meeting at Cardiff in 1928. A catalogue describing these tubes and their accessories has just reached us. It gives details of the complete range of the tubes, and furnishes a good deal of information, especially by means of photographs, as to their use from the point of view of the general practitioner. The apparatus is made ready for transport in two packages: one consists of the transformer, weighing 40 lb., and the other, containing the tube itself, the time switch, and other accessories, weighs 30 lb. The whole installation can be easily taken to the patient's house and safely operated from the domestic electrical supply. The brochure is exceptionally well produced.

Nova et Vetera.

LIVES OF ENGLISH SURGEONS.

The Thelwall Thomas Memorial Volumes.

The revisers of *Plarr's Lives of the Fellows of the Royal College of Surgeons of England*,[1] which work was begun by the late librarian of the College as long ago as 1912, tell us in their preface to the two handsome volumes now published of the history of the undertaking so happily brought to fruition. Mr. Victor G. Plarr for some years diligently collected obituary notices, but his collection was found by Sir D'Arcy Power and Mr. W. G. Spencer in 1923 to be too diffuse and not sufficiently well arranged for immediate publication. It was therefore put aside temporarily, though Mr. Plarr continued to add to it. Since his death in January, 1929, the work of editing and adding to the biographies has been carried on by Sir D'Arcy Power, Mr. W. G. Spencer, and Professor G. E. Gask, who have brought it up to the date of the end of 1929, if not later.

The cost of these volumes has been defrayed out of a bequest made to the College by the late Mr. Thelwall Thomas of Liverpool, who died in 1927, and the book is accordingly entitled "The Thelwall Thomas Memorial."

A considerable number of the deceased Fellows have been personally known to the revisers, who have therefore been in a position to add characteristic details from their own knowledge. A memoir of Mr. Plarr follows the preface, after which comes a transcript of the charter of 1843, and a list of the 300 Fellows chosen from the surgeons of the day in London and the provinces, and elected *en bloc* on December 11th, 1843. In August, 1844, 240 more Fellows were elected in the same way, including twenty-nine chosen from the service of the Honourable East India Company.

These "Lives" include some 2,600 Fellows, and form a chronicle and brief abstract of the time as far as English surgery is concerned, for they include, besides the 300 (of whom one at least accepted the honour under protest, as disapproving of the innovation), Fellows by examination, Honorary Fellows, for the most part foreign, and those who, from their services to the art, have been thought worthy of election to the Fellowship after holding the diploma of Membership for a number of years (at present twenty). There have also been a very few who have been elected *ad eundum*, as possessing the diploma of Fellowship of Ireland or Edinburgh. These Fellowships have only been granted in very special circumstances.

Sir D'Arcy Power's experience as a contributor to the *Dictionary of National Biography* has doubtless stood him and his colleagues in good stead in deciding what to admit and what to omit, and he has, wisely as we think, decided in favour of accepting anecdotes and statements which throw a light on character, and at the same time prevent this vast mass of data from being dry and dull. Unfortunately, it is unavoidable that a large number of the persons discussed were not known to any of the editors, either personally or by hearsay, and the records of their careers have the formal character of too many obituary notices. The result is that there is a certain inequality of treatment. For instance, Sir Richard Owen, great comparative anatomist as he was, was notoriously grudging in acknowledgement of other men's work, and apt to claim credit which was due to others. In the notice of Sir James Paget it is stated that Owen examined his preparation of *Trichina spiralis*, determined the nature of the worm, named it, and took the credit. But in the article on Owen there is no hint at this weakness of character. Some of the anecdotes of distinguished Fellows are well known to the elders of to-day, and may perhaps by some be thought trite, but it is right that they should be put on record as some evidence of what were the personalities of the Victorian, Edwardian, and early Fifth-Georgian surgeons. For the eighty-six years since 1843 have seen great changes and enormous improvements, and even in the lifetime of the revisers there have been surgical revolutions. Even for them it must be hard to realize that they knew the day when Sydney Jones of St. Thomas's was reckoned the best operator in London, and when surgeons would travel long distances to see him do lateral lithotomy, Syme's amputation, or excision of the upper jaw, which operations were then held to be the highest tests of skill. Not one of these would divert attention from the morning paper to-day.

As might be expected, the length of the notices varies widely. Some are two lines long, and all lengths are to be found between that minimum and the seven and a half pages devoted to Sir Victor Horsley. The notice of Sir Frederick Treves is an epitome of the history of the surgical treatment of intestinal obstruction and appendicitis. It leaves us with the impression that Treves was a greater artist with the pen than with the scalpel.

We have looked at every one of these 1,348 pages without finding a record of any Fellow being convicted of crime, although a former President of the College is credited with the "abduction" of the lady who became his wife. Unfortunately, the stress of professional worries proved too much for some, and the list of suicides is a heavy one. But, on the whole, the Fellows seem to have lasted well. We have gained the impression that an unusual proportion passed the Psalmist's maximum of life. They went and came to and from all parts of the earth, and the Roll of Honour of Fellows who gave their lives as medical missionaries is a brilliant if short one. Others devoted themselves almost wholly to science. Such were George Newport, Kitchen Parker (who "was once known to speak for four hours continuously on the lower jawbone of the raven, without saying anything that was other than valuable"), George Bennett of Sydney (the notice of whom extends to two pages), Caleb Burrell Rose, Swan, Symington, Thane, etc.

Among those who followed a military career are John Wylie of the Indian service (elected in 1844), who in the fight of Corygaum, near Poonah, in 1817, distinguished himself by attending to the wounded when he could spare time from leading the sepoys to the attack. The account of this affair in the "Lives" occupies two pages of small print, none of which could be spared. Wylie afterwards was among the first lot of medical officers to receive the C.B. This entry is a good specimen of the scale on which this work has been carried out. Space has not been grudged for the insertion of any matter of interest. John Haddy James, one of the original 300, was the subject of a regimental order of the 1st Life Guards which must surely be unique. It was dated on the day of Waterloo, and ran as follows: "Assistant Surgeon James is not in future to expose himself under fire," as it appears that he had done previously. Another distinguished army surgeon was George James Guthrie, who, at the age of 16, after due examination, was posted to the 28th Regiment as hospital mate—his colonel was 24. It was in Guthrie's quarrel in later years that another Fellow—the pugnacious Frederick J. H. Hale Thomson—fought a duel with Sir Charles Forbes on Clapham Common, as recorded, with much more interesting matter, under Thomson's name. Thomson terminated his stormy career by taking an overdose of chlorodyne.

In selecting the first 300 Fellows the claims of general practitioners were not overlooked, if we may take Thomas Callaway of the Borough High Street as an example. We are told that his practice was more medical than surgical, and a large yellow chariot and footmen seem to have played an important part in it. His son was a Fellow by examination who gained the Jacksonian Prize for an essay on dislocations and fractures of the clavicle and shoulder-joint in 1846.

We think it will be evident from what we have said that the high expectations formed on account of the repute of the author and revisers of these volumes have been amply fulfilled. The feast offered is a rich one, and we have only picked out a few of the numerous plums. A cynic has altered the old adage to "De mortuis nil nisi *bunkum*," and "debunking" the dead has become a favourite pastime among rising young writers. Such has

[1] *Plarr's Lives of the Fellows of the Royal College of Surgeons of England.* The Thelwall Thomas Memorial. Vols. i and ii. Revised by Sir D'Arcy Power, K.B.E. (Mil.), F.R.C.S.Eng., with the assistance of W. G. Spencer, O.B.E., M.S., F.R.C.S.Eng., and Professor G. E. Gask, C.M.G., D.S.O., F.R.C.S.Eng. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1930. (6½ × 10½, vol. i, pp. xxvi + 752; vol. ii, pp. 596. Cloth, 42s. net; half bound, 57s. 6d. net.)

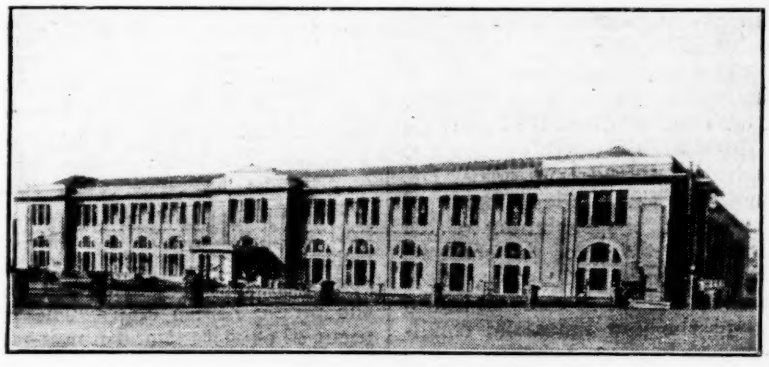
not been a guiding principle of Sir D'Arcy Power and his coadjutors. Rather have they thoroughly acted up to the spirit of the lines by Dr. Johnson, quoted on the fly-leaf facing the first "Life":

"To calumniate the Dead is Baseness:
To flatter them is surely folly."

In a work of this vast scope there must, of course, be mistakes. It is intended to issue a supplement in ten years' time, which will include a list of errata and corrigenda.

MEDICAL EDUCATION IN BURMA.

In Rangoon, the capital of Burma, there is nearing completion one of the most comprehensive university building schemes in the Empire. Burma is situated on the eastern side of the Bay of Bengal, and is peopled by races of Mongolian descent, allied to the Chinese and Siamese, who are their nearest neighbours. It has been attached to India for administrative and fiscal purposes since its conquest during last century, but it has nothing in common with that country in language, customs, religion, or descent. The conception of a great residential university for Burma was due to Sir S. Harcourt Butler, who served two terms as Governor. He acquired for the purpose four hundred acres of land five miles out of Rangoon, on the banks of the Victoria Lake, one of the healthiest and most beautiful spots in the neighbourhood, and the sum of nearly one million pounds was placed by the Burma Government at the disposal of the University Building Trust for building and equipping the new university. Numerous private donors have given valuable financial assistance, the civil and mining engineering buildings having been presented by the Burma Oil Co., Ltd., at a cost of £100,000, and the students' union, boat club, university library, theatre, and gymnasium have been given entirely by private well-wishers.



College of Medicine, Rangoon University.

With the exception of the medical college building, which has been erected in close proximity to the General Hospital, the whole university is being constructed on this estate, the organization of which has grown to such an extent that the question of forming a university municipality, separate from that of Rangoon, is being considered. The university is entirely residential, and is organized as two constituent colleges, University College and Judson College, the second being largely supported by mission funds from America, and the teaching staff being chiefly American. From University College, the larger institution, it is expected that the medical department will separate off as a third constituent college of the university within the next few months, as a matter of administrative convenience. The arts and science buildings are situated on either side of the main university avenue, University College being on the east side and Judson on the west. At the head of the main avenue stands the convocation building, the chief architectural feature of the estate. In its main hall there is seating accommodation for over two thousand persons, and this building also contains the council and senate chambers and the university offices. The undergraduates are comfortably housed in nine three-story halls, each accommodating a hundred and twenty students in separate rooms, with quarters for a number of assistant wardens and tutors. There are also houses for wardens and for most of the full-time members of the staff. Modern sanitation and plumbing, with supplies of hot and cold water, are provided in all buildings, and electric light and power and modern cooking ranges are universally available. Ample playing grounds have been laid out for all forms of games; the university rowing club is in a specially flourishing condition, and the military training corps has a large membership.

At the beginning of the present century Rangoon was very backward so far as her public buildings were concerned, the hospitals and schools, especially, being out of date. Since then conditions have changed with almost bewildering rapidity. The result is that the General Hospital (550 beds), the newly constructed Dufferin Hospital for Women, and the Mental Hospital are of the most modern type, well planned and splendidly equipped. There are, therefore, in Rangoon, with its 400,000 inhabitants, all the clinical facilities for medical education of university standard, and in 1923 the first batch of M.B. students, having passed the university intermediate examination, entered on the newly instituted courses in temporary buildings. The M.B., B.S. degrees of the University of Rangoon were conferred for the first time in July, 1929, on ten recipients, nearly all of whom at once enrolled as members of the British Medical Association. After matriculation, students in Burma must spend a minimum of seven years at the university in order to obtain the M.B., B.S. degrees. The first two years are occupied in intermediate work in arts and science for the university intermediate examination, the remaining five being spent as in England—two years preclinical and three years clinical.

The new medical college building was opened in October, 1929, and in design and equipment is unsurpassed by any medical teaching institute in Asia. It takes the form of a square two-story building, with a frontage of 300 feet; it is arranged round a quadrangle, into which the two superimposed main lecture theatres project. The ground floor accommodates the departments of physiology (including histology and biochemistry) and forensic medicine, three lecture theatres, the examination hall, offices, cloak rooms, lavatories, and students' common rooms. On the second floor are the departments of anatomy, operative surgery, pharmacology and materia medica, pathology and bacteriology, the library, a large lecture theatre, and several small seminar rooms. Animal rooms and gas plant are situated in separate buildings at the rear of the main structure. Hygiene is taught in the recently opened Institute of Public Health, the director of which is the university lecturer in hygiene. University funds have also provided clinical and post-mortem theatres of the most modern type at the hospitals. Apart from the general completeness of equipment and the ample supply of anatomical material, the points which seem most to impress experienced visitors are the splendidly arranged and amply stocked museums in the pathology and forensic medicine departments. This is due, not only to the keenness of the staffs concerned, but to the facts that there are over one thousand complete necropsies performed annually in the Rangoon General Hospital, and that crime with violence is notoriously prevalent.

There are seven university medical chairs—anatomy, physiology, pathology, forensic medicine, surgery, medicine, and obstetrics. The heads of the remaining departments have the status of university lecturers. All the heads of departments of medical teaching are European, as is, practically speaking, the case in the arts, science, engineering, and law departments also. The dean of medical studies is Lieutenant-Colonel T. F. Owens, I.M.S., professor of forensic medicine. In conjunction with the consulting architect, Mr. S. P. Bush, A.R.I.B.A., he has played the leading part in designing and equipping the college of medicine.

British Medical Journal.

SATURDAY, AUGUST 23RD, 1930.

A CENTURY OF HEALTH PROGRESS IN GLASGOW.

If at the first the great cities of this country fostered the evils which conduce to disease prevalence and mortality, they have in most cases in the course of years succeeded in discovering and working out appropriate and effective remedies. During the earlier part of the nineteenth century, when the local massing of the industrial population ensured the rapid spread of any communicable disease from its point of origin, the city of Glasgow was repeatedly swept by the major infections. The frequency of those outbreaks then forms a striking contrast to the comparative immunity which the city now enjoys, despite the fact that its population has not only become more industrialized than ever but has also increased to a notable degree in its total number. This change for the better, while doubtless attributable in part to causes of a general nature, is due also in substantial measure to the competence and ability of the medical administrators to whom the health affairs of the city were entrusted. Its first medical officer was Sir William Gairdner, its second was Dr. J. B. Russell, and its third was Dr. A. K. Chalmers. Though now retired from office, Dr. Chalmers has not abandoned the life-long habit of public service, but has devoted the beginning of his leisure to the preparation of a review of the sanitary progress of the city. In *The Health of Glasgow, 1818–1925*,[1] he has traced the course of the movement in the city which sought to adapt the new industrial conditions to the requirements of healthy living so as to produce a race which, though industrialized, should yet be fully vigorous.

As the history of sanitary reform in Glasgow has been to a large extent the history of reform in its housing conditions, Dr. Chalmers opens with an account of the improvement in housing standards. He recognizes that every form of shelter which man has devised to protect himself from the elements limits to some degree the free play around him of forces essential to his well-being, especially fresh air and sunlight. The fever of 1818 had directed attention to the prevailing squalor of the affected districts, yet the wynds and closes of Glasgow in 1849, a year of epidemic cholera, were still such as to be described by contemporary writers as "frightful abodes of human misery." The rapid growth of the city accentuated the grosser defects of the tenement system of housing and increased the difficulty of applying remedies on the large scale. A provisional datum of habitability was first laid down in a local Act of 1862. Succeeding Acts from 1886 to 1900 progressively increased the stringency of requirements till the general Housing Act of 1919 ushered in the era of State-aided housing schemes. The improvement of housing standards as reflected in the increased number of apartments in new houses is well brought out in a table which covers the period from 1872 to 1926. In 1872–73, of 4,463 new houses authorized 1,338 were of one apartment, 2,198 of two apartments, 802 of three apartments, and the rest of four apartments and over. In 1925–26, of 6,796 new houses authorized none were of one apartment, and only 318 were of two apartments, while 4,649 were of three apartments, and the rest of four apartments and over.

In the campaign against tuberculosis the Corporation of Glasgow was early in the field. In 1889, within five years of Koch's discovery of the bacillus, it obtained a decision in court upholding its condemnation of a tuberculous carcase, and in 1890 its amending Police Act contained provisions for dealing with tuberculous meat and milk. An inquiry made in Glasgow in 1897 revealed a correspondence between a high number of persons per room in houses and a high phthisis death rate. In 1899 a public health laboratory was opened for the examination of sputum and other discharges. In 1900 notifications of phthisis began to be received from general and Poor Law hospitals and dispensaries, and in 1903 a medical assistant was appointed to follow up phthisis cases. In 1906 the first dispensary for consumptives was opened, and four years later pulmonary tuberculosis became generally notifiable in Glasgow. The National Insurance Act of 1911 and the Treasury grant which it empowered led to a wide extension of institutional accommodation for tuberculosis, which culminated in Mearnskirk Sanatorium.

An early step for the control of infant mortality was the inauguration in 1904 of the depot at Osborne Street for the preparation of milk for infants. Consultations for infants were begun in 1906 with a nucleus of the babies supplied by the depot, and classes were set on foot for the education of mothers in infant hygiene. In 1906, also, the first woman medical officer was appointed. In 1907 the Notification of Births Act brought the occurrence of births under the notice of officials within thirty-six hours. When the Osborne Street Depot, having served its purpose, was closed in 1909, official health visitors were added to the public health staff. The provision for the treatment of expectant and nursing mothers and pre-school children empowered by the Notification of Births (Extension) Act of 1915, although welcomed by Dr. Chalmers, was regarded by him as essentially auxiliary so far as Glasgow was concerned, inasmuch as it could only produce the best results if associated with reform in the housing conditions of the city on a wider scale than had up till then been attempted. Nevertheless, he utilized the facilities of the Act to their full extent, devising schemes for the basic services with extensive primary and secondary developments in every field of maternity and child welfare work. He notes that the operation in Glasgow of the Midwives (Scotland) Act, 1915, was followed by a rise in the number of notifications of puerperal fever—not, he considers, because of any increased frequency in the occurrence of cases, but because of the resulting keener scrutiny of the causes of febrile states in parturient women. He emphasizes the unsatisfactory nature of the home treatment of ophthalmia neonatorum, as a result of which provision was made for the admission of infants affected, and their mothers, to Baird Street Reception House.

Cholera was among the first of the major infections to feel the curb of sanitary reform. During the third pandemic in 1854 there were 3,886 deaths from cholera in Glasgow: during the fourth, in 1866, after the introduction of Loch Katrine water, only 68. Typhus yielded in its turn; in 1847 it caused 4,346 deaths, and it is now approaching extinction. The typhoid death rate in 1868 was 595 per million: by 1921–25 it had fallen to 11. Experience in Glasgow does not support the view that carriers are the dominant factor in the spread of the enteric fevers; missed cases were found to be more frequently in operation. The suppression of the older infections has been followed in Glasgow as elsewhere by the rise of

[1] *The Health of Glasgow, 1818–1925.* An outline by A. K. Chalmers, LL.D., M.D., etc. Glasgow: Printed by authority of the Corporation. 1930. (Roy. 8vo, pp. xviii + 461; illustrated.)

that new tribe of diseases which specially affect the central nervous system. Cerebro-spinal fever reached epidemic proportions in 1906-7, encephalitis lethargica in 1923-24, and poliomyelitis in 1928. On the coming into operation of the Public Health (Venereal Diseases) Regulations, 1917, Glasgow initiated active measures for the diagnosis and treatment of these diseases. Dr. Chalmers does not (for the time being at least) favour the general notification of venereal disease except in cases where it can be shown that third parties suffer, for example, from congenital syphilis and ophthalmia neonatorum. He thinks there is some risk that too much attention may be given to the provision of facilities for treatment and too little on the basis of avoiding exposure to infection. Of the men presenting themselves at one of the municipal treatment centres during a recent year more than half were found to be habitual libertines. "If this," he says, "is a fair sample of the patients attending male clinics elsewhere, then we must frankly recognize that the treatment centres are being put to a use foreign to the intention for which they were created, and that a corresponding proportion of their annual cost is being diverted to the furtherance of promiscuity."

Glasgow, like other cities in this country, has at times a smoky atmosphere. The amount of soot deposited is measured by means of nine soot-collecting gauges in parks and gardens. The deposit over a period of five years is quoted as 326 tons per square mile per annum; this is less than in Liverpool, Birmingham, and London, but more than in Salford. The vertical steam boiler is a frequent source of industrial smoke. Service in the prevention of industrial smoke is rendered by classes for the instruction of steam boiler firemen in the principles of coal combustion and furnace management held under the auspices of the local branch of the National Smoke Abatement League. To check domestic smoke the corporation supplies a smokeless fuel named kincole, the radiant heat of which is claimed to be more effective than that of bituminous coal.

Though Dr. Chalmers has dealt with the health of Glasgow on the broadest lines, and made little direct reference to his personal work, the part he played in moulding the policy of the city and giving expression to it in action is much too important for any modesty to disguise, and his book stands as a worthy memorial to his distinguished record as an administrator. It will be read with appreciation by the expert and with profit by all interested in public health problems, especially those which are now emerging as a result of the coming into operation of the Local Government Acts of 1929.

BACTERIAL METABOLISM.

THE study of bacterial metabolism is one of the directions in which the chemical side of biological study is advancing most rapidly. Pasteur was the father, both of bacteriology as we know it to-day and of bacteriological chemistry, and although the main interests of bacteriology were soon diverted, in response to the needs of medicine, to the morphological and descriptive side of the subject, yet the needs of commerce served to ensure the continuation of researches into the chemical phenomena of fermentation. Progress in this direction has been steady, and if the extent to which bacteria and moulds now serve the purposes of large-scale synthetic chemistry is not widely realized, it is because manufacturers are naturally loath to court publicity for their methods, rather than because the place of bacteria in commerce is not assured. As for the importance of the nitrifying micro-organisms in agriculture, this has been established by the work of Vinogradoff; indeed, we know that upon these organisms the maintenance of plant life, and therefore of animal life, depends.

To assess fairly the relationship in which bacteriological chemistry stands to medicine is no easy task. Every researcher in bacteriology must at some time have felt the need for a fuller knowledge of the principles governing the composition of his media. In the past, these media have been made up on almost purely empirical lines, with the result that failures to obtain satisfactory results have been frequent and disheartening. The study of bacteriological chemistry is tending steadily to give us a fuller and sounder knowledge of such matters; and the application of the principles involved in the conception of "reduction potential" may well prove to be very fruitful. For medicine, however, laboratory culture media are but a means to an end. The study of infections involves the study of bacteria in a natural cultural medium, a medium, moreover, that plays no passive part. We might hope that the study of metabolic processes of bacteria would help us in more ways than one. In the first place, no other living cells lend themselves so readily to the exact control of environmental conditions. Food and oxygen supply can be measured exactly, and products accurately estimated. If from such experiments we could safely draw inferences as to the activities of animal cells, we should have at our disposal a most valuable means for studying metabolic processes. Such inferences can, however, be drawn only with great caution. In certain respects, bacteria differ widely in their behaviour from the cells of higher organisms. Thus, for example, many species of bacteria can live on media in which the sole source of nitrogen is ammonium chloride, and others can derive their energy from the oxidation of sulphur or of hydrogen. Again, we are accustomed to think of the cells of animals as, to some extent at least, capable of regulating their metabolism in response to their own needs, rather than as being dependant, as bacteria appear to be, on the materials offered to them in the medium. In some ways bacteria in culture seem to behave rather as enzyme and substrate; metabolic processes continue until either the supply of substrate is exhausted or the reactions are brought to a close and growth is stopped by concentration of end-products.

A recent monograph by Miss Marjory Stephenson[1] on the subject we have been discussing gives an admirable view of the ground already won, and indicates some of the lines along which fresh advances are likely to be made. So far as we are aware, there is no other book from which may be drawn such concise and adequate information about the chief phases of bacterial metabolism. The study of bacterial metabolism must surely throw light on the reactions between infecting organism and infected animal, on the production of toxin, and on the defence mechanisms of the bacteria against the bactericidal efforts of the host. The work of Heidelberger and Avery seems to point the way for investigations of this kind, since they have demonstrated the relationship between the special carbohydrate cell constituents and immunological specificity. It is known, for instance, from the work of Griffith, that cultivation of "S" pneumococci in media containing homologous antiserum results in the production of "R" types—a finding that can only mean a modification of bacterial metabolism by the antibodies present in the medium.

[1] *Bacterial Metabolism.* By Marjory Stephenson, M.A. Monographs on Biochemistry. London and New York: Longmans, Green and Co. 1930. 18s. net.

THE ANNUAL MEETING IN CANADA.

CANADA'S warm welcome of the visiting members of the British Medical Association, forecast in the *British Medical Journal* of July 19th, is now beginning to materialize. At the end of their sea journey they received a most cordially worded telegram from Professor Harvey Smith, the President-Elect, announcing that the hand of friendship and fraternity awaited them throughout the Dominion of Canada. The steamship *Duchess of Bedford*, conveying Professor Burgess, President of the Association, Dr. Brackenbury, Chairman of Council, and a party of members numbering 290, was boarded at Father Point by Dr. A. T. Bazin, President of the Canadian Medical Association, with Dr. Kenny, and members of the Winnipeg reception committee; unfortunately, the arrival of the ship had been delayed by fog, and so a proposed luncheon in Quebec and the Lieutenant-Governor's garden party had to be abandoned. A banquet, jointly arranged by the Canadian Medical Association organizations of the Province and City of Quebec and the medical profession of that city, was held at the Chateau Frontenac Hotel; it was attended by 400 guests. In the unavoidable absence of the Prime Minister of Quebec, eloquent speeches of welcome were delivered by the Hon. Athanase David, K.C. (Provincial Secretary of Quebec), the Mayor of that city, and Dr. Bazin, to which Professor Burgess and Dr. Brackenbury replied.

THROMBO-ANGIITIS OBLITERANS AND ARTERIO-SCLEROSIS.

THE report on arteritis of various kinds, and gangrene due to arteritis, by Dr. G. Spehl of Brussels and Professor E. Tytgat of Ghent, presented in June, 1930, to the Belgian Surgical Society[1] deals at considerable length with the pathological and therapeutic (especially surgical) questions concerning the nature of these conditions and the possibility of preventing or limiting resulting gangrene. The authors quote Leibovici's opinion that the endarteritis obliterans of von Winiwarter and Friedländer is due to juvenile atheroma, and should be distinguished from Buerger's thrombo-angiitis obliterans, but they state that this distinction is not universally accepted, and that the anatomical-clinical signs of Buerger's disease, though at first characteristic, may be less so later on. Both Buerger and Leibovici agree that in cases of arteritis there are two stages: in the first there is an inflammatory infiltration of all the coats with sometimes purulent or miliary giant-cell foci near the internal elastic lamina; in the second stage the affected vessel undergoes connective tissue obliteration by oganization of the obstructing tissue. Buerger insists that the obliterating endarteritis is due to the organization of the clot and not to a process of proliferating endarteritis as described by von Winiwarter in 1879; the condition is quite distinct, therefore, from arteriosclerosis (atheroma). The latter may, however, in a few cases, be combined with thrombo-angiitis obliterans. In regard to the various modern pathological-anatomical and therapeutic views the authors cite sufficient authorities to render their work a kind of "critical review" of recent literature (mainly in the French language) on the whole subject, especially in regard to the efficacy and scientific bases of the methods of examination and treatment. Leriche claims that there is an "internal" stage of arteritis which precedes the subsequent "external" stage, in which the adventitia is affected, with involvement of the neighbouring veins and nervous fibres and ganglion cells by periarteritic "matting." In the first stage he thinks that gangrene is rare, whilst it is common when the adventitia becomes involved; the gangrene, in his opinion, is not caused by obliteration of the arterial trunk alone, but is largely dependent on the superadded vasomotor disturbance resulting from the periarteritis. This conception constitutes the basis for the treatment of ischaemic symptoms and threatened gangrene by periarterial sympathectomy and similar operations—with the purpose of preventing the onset of gangrene and troublesome trophic (ischaemic) ulcers and pains, and with the hope of limiting the gangrenous process when it has already appeared (and thus avoiding unnecessarily extensive amputation). But according to the results obtained the value of Leriche's operation is very doubtful in cases of commencing gangrene, whether due to thrombo-angiitis obliterans or to juvenile or senile atheroma. W. A. Oppel's (1911) theory of gangrene by permanent angiospasm due to hyperadrenalinaemia (according to Ghiron adrenaline experimentally gives rise to vascular lesions comparable to those of thrombo-angiitis obliterans) has been the basis for the operation of epinephrectomy, but the authors conclude that the operation is one the physiological bases of which are not sufficiently solid, and that in spite of the good results reported by Oppel and diminished operation mortality in the hands of skilled surgeons, it can hardly take a recognized place in surgical therapeutics. Wieting's arterio-venous anastomosis is already almost forgotten as a method of treatment, and from an impartial analysis of recorded results the authors think it unnecessary to draw it back from oblivion. Diathermy appears to be of considerable use in some cases. In regard to modern methods of exploring the state of the circulation in cases of gangrene or threatened gangrene the authors regard Moskowicz's test as the best. The oscillometric method with Pachon's instrument (too little employed in England) is undoubtedly helpful. Both these methods should be used. The value of arteriography (with lipiodol, sodium iodide, or sodium bromide) is not sufficient to counterbalance its dangers and other disadvantages. Spehl and Tytgat refer to many other points regarding pathogeny, diagnosis, and treatment, for which their report and the references they give should be consulted; and those whom thrombo-angiitis obliterans attracts as a subject for study will no doubt turn with interest to the paper by Dr. Parkes Weber and two of his colleagues published in our present issue at page 279.

[1] Les Artérites et les Gangrènes par Artérites. Par les docteurs Georges Spehl (Adjoint du Service Clinique de Chirurgie, Bruxelles) et Edgard Tytgat (Professeur de Pathologie Chirurgicale à l'Université de Gand). Rapport présenté à la Séance extraordinaire de la Société Belge de Chirurgie de Juin, 1930. Pp. 47. (Reprint from the *Journal de Chirurgie et Annales de la Société Belge de Chirurgie.*)

NOISE AND THE TOWN DWELLER.

IN an age of motor traffic, sirens, pneumatic road-drills, and intra-urban train services, it has become impossible for the city dweller to escape from noise even during his hours of sleep. Though the man whose house abuts on the railway will admit that he no longer notices the passing of a train, there can be little doubt that noise has a harmful effect on the mind, even of those who appear to be indifferent to it. The effort of concentration is considerably increased in noisy surroundings, and it has been repeatedly demonstrated that existing neurasthenia is aggravated by noise, and improved by a quiet environment. The effects are inevitably serious on young children and infants, whose nervous systems are insufficiently developed to withstand a prolonged strain; the child who has slept in the midst of uproar will awake listless and tired, and if the conditions persist his growth will suffer. The nursery schools have shown the value of a midday rest to the child who is kept awake late in a noisy and overcrowded home. In the annual report of the Willesden Urban District Council some of the difficulties in the path of legislation to reduce noise are discussed. Clearly the repair of the roads and the warnings of motor traffic are among the necessary evils of our civilization, nor is it very easy to legislate for the suppression of the crying infant, the howling dog, or the incipient pianist. By means of a meter designed to convert sound into measurable electric waves

it has been possible to determine the effects of noise on the human body. Among other results it has been found that a sound of a given magnitude produces a reaction of fear in the newborn infant, that noise raises the blood pressure in the adult, and that a degree of noise insufficient to waken a sleeping person will cause the muscles to contract and to remain tense for as long as thirty minutes before they relax. Deafness, dizziness, and headache are the lot of those who earn their livelihood by boiler-making or cotton-weaving, and it has been estimated that for normal persons it requires 19 per cent. more energy to perform duties in noisy surroundings than to perform the same duties in a quiet environment; the strain on those whose mental or physical health is not normal can be imagined. The Middlesex County Council has provided certain by-laws to reduce street noises, but these are directed chiefly against street criers and singers, and cannot affect traffic noise. The fact that many of our large hospitals are situated in the midst of busy thoroughfares makes the problem more urgent, since noise is clearly on the increase. Into the Middlesex County Council Bill, which is to come before Parliament next session, a clause has been introduced to give the local authorities the same powers with reference to noise that they have with reference to nuisance under the Public Health Act. This will apply to excessive, unreasonable, or unnecessary noise, wherever it is injurious to health, or where it is capable of being mitigated, having regard to all the circumstances, such as cost. In New York the Noise Abatement Commission has suggested fines for those who create unnecessary noise; sound-proof buildings and zones of silence round hospitals have also been advocated. A greater hope of prevention lies in removal of the cause by the provision of silencers, abolition of strident horns, destruction of worn-out machines, the use of pneumatic tyres, and the substitution of electric welding for riveting. It is estimated that at least 75 per cent. of street noise could be abolished by these measures, and a movement in favour of noise abatement would do much to pave the way for the necessary legislation.

CONGRESS OF MILITARY MEDICINE: AN AMERICAN ECHO.

THE official report of the fifth International Congress of Military Medicine, which was held in London in May, 1929, has already been published, but the American member of the permanent committee of the congress, Commander W. S. Bainbridge of the United States Naval Reserve, has compiled a shorter report[1] principally for American readers. He has summarized the congress discussions, and he adds some descriptive touches, which, with the illustrations, as the foreword says, "all but take you to the meeting." Reproductions of the photographs of the personalities and events of the congress greatly brighten up the pages; the only failure is a sheet reproduction of the group of the delegates taken in the courtyard of the British Medical Association House, in which it is very difficult to recognize a single figure. Resplendent uniforms and decorations, while brilliant to survey, are apt to deteriorate sadly under the combined processes of photography and block-making. The compiler has done his work well, and the opinions and recommendations put forward during some very useful sessions are adequately set out; he carries the story a stage further, for he was the member of the committee appointed to visit, after the congress, certain European countries with a view to completing the work which had started in London, and also to ensure that good national delegations will be sent to the sixth congress at Budapest next year. He states that with this object in view he has held conferences with the chiefs of the medical services and other important people of seventeen nations. One remarkable personage he visited, and on whom he bestowed an American decoration, was General Ludvik Fisher, Surgeon-General of Czechoslovakia, who has created in his country a medical service which now embraces nineteen hospitals and seven spas. General Fisher practised for many years as a surgeon in Chicago, but, always a Czech at heart, he returned to help his country in the war, and helped her so effectively that the old Austrian Government put a price on his capture, though the new Austrian Government has done him honour. Commander Bainbridge believes that excellent as was the London congress, when forty nations participated (as against twenty when the first congress was held in Belgium in 1921), next year's event at Budapest will surpass that record. For the first time Germany will be sending delegates to what in its origin was a conference of the military medical services of the allied and associated Powers. The report concludes with a pleasing tribute to British hospitality, and an appreciation of some of those who had most to do with the arrangements in London, especially the president, Lieut.-General Sir Matthew Fell, and the energetic organizing secretary, Major A. D. Stirling.

[1] Report on the Fifth International Congress of Military Medicine and Pharmacy, London, May, 1929. By W. S. Bainbridge, United States Naval Reserve. Collegiate Press, Menasha, Wis.

GIZA MEMORIAL OPHTHALMIC LABORATORY.

IT might be anticipated that the centres of medical teaching and research which are scattered throughout the more distant parts of the Empire, being to some extent isolated and cut off from the stimulation of close contact with the scientific thought of the Mother Country, would tend to fall behind in originality and enthusiasm. This at any rate cannot be said of the Giza Memorial Ophthalmic Laboratory at Cairo, to judge by the last report we have received of the work done there. The laboratory forms a memorial to the men of the Egyptian Labour Corps and Camel Transport Corps who died while serving the armies of the Empire during the great war. It may be remembered that the funds for its erection were voted in 1921 by the Imperial War Graves Commission in London, and the cost of its equipment was granted by the Egyptian Government. The result has been the foundation of one of the finest ophthalmological laboratories in the world, and its existence and success were largely dependent upon the energy and enthusiasm of Mr. MacCallan, who suggested and inaugurated the scheme. There is now a well-equipped laboratory for pathological and bacteriological research provided with a library, and the staff give a valuable short course of post-graduate training in the treatment of diseases of the eye, in association with the adjacent new Ophthalmological Hospital at Giza. The report on the work of the laboratory shows a very large selection of interesting clinical material, and the rarer and the most instructive of the cases are described and illustrated in some thirty pages. The most interesting part of the report, however, deals with the research work which the staff of the laboratory has undertaken under the direction of Mr. Rowland Wilson. As would be anticipated in an Egyptian laboratory, a considerable amount of attention is given to trachoma. With regard to the etiology of this disease the results have been somewhat negative and have tended to decrease the importance of the bodies of Prowazek and Lindner, as well as the specific organisms which have been cited from time to time as being etiological factors in the disease. A long paper is contributed on the appearances of follicular conjunctivitis in monkeys, and it is concluded that the appearances resembling this disease that occur in these animals have not been proved to be definitely related to trachoma. The observations which are recorded and the difficulties which have been met in determining the pathogenicity of the various organisms described, show very definitely that the results of investigations, such as those recently carried out by Noguchi, require further careful

investigation before they can be accepted. With the enormous amount of trachomatous material at the disposal of the staff, guidance as to the treatment of this disease is of considerable interest. Treatment by chaulmoogra oil has been intensively practised, and while it is pointed out that this is not a specific agent in the treatment of trachoma, yet it possesses valuable properties, especially in the treatment of the later stages of the disease. Its advantage lies not so much in shortening the course of the affection as in the comparatively small discomfort which its administration involves. Treatment with carbon dioxide snow also has been investigated, but the method appears to be less satisfactory than the old-fashioned application of copper sulphate. Gold salts have also been employed as subconjunctival injections, and in some cases this method of treatment has had good results: one of the features of its use is its efficacy in producing a relatively clear cornea as a final result, but among the disadvantages of the treatment must be noted the considerable pain and discomfort to the patient and the cost of the drug.

THE PROFESSIONAL CLASSES AID COUNCIL.

THE Professional Classes Aid Council, upon which the British Medical Association is represented by its Treasurer, Mr. Bishop Harman, has enhanced the interest of its report for 1929–30 by publishing an address delivered last November by its president, Major Darwin, who is now succeeded in office by Lord Sankey, the present Lord Chancellor. Major Darwin recalled the fact that the members of the Professional Classes War Relief Council of 1914 were mostly amateurs in philanthropic work, and that, although anxious not to interfere with the work of other benevolent bodies, their efforts were for a long time regarded with suspicion. The first aim of the council still remained the same—namely, to see in every case whether the applicant could not be dealt with more effectively by some older professional association. But the giving of advice to applicants by a body upon which a very large number of professions was represented was not in itself sufficient. The council discovered that financial resources were necessary as well as advice in helping an applicant to earn again his living or to regulate his life, and that blind trust in the statements even of educated men and women was dangerous. It therefore added to its activities methods of searching inquiry and "bridge-building" financial grants, especially in such matters as education. Help is being given preferably to persons suffering from misfortunes which could not be foreseen and reasonably provided against. The aim of such assistance is not merely to provide temporary relief, but rather to enable the applicant to earn his own livelihood. The council has to deplore a serious reduction in income during the last twelve months, a fall which is perhaps hardly likely to be arrested under the present economic conditions. But the fact that nearly 78 per cent. of the whole outlay for the year has been spent on direct relief should stimulate the generous-minded to send such donations as they can afford to the treasurer, the Hon. George Colville, 251, Brompton Road, S.W.3.

"CHEVALIER" TAYLOR.

JOHN TAYLOR, who in the eighteenth century dubbed himself "Chevalier," was undoubtedly a quack, and according to Dr. Johnson a very ignorant one, but at that time nobody knew much of ophthalmology, and the practice of quacks probably differed little from that of duly qualified doctors of medicine. The chief difference between them was that the regular physicians knew their own want of knowledge and often refrained from meddling, while charlatans such as Taylor were deterred by no fear of failures, which they were prepared to explain away by impudent bluff. A good deal has been written about Taylor and his confreres from time to time. Hogarth has immortalized him, and a brief account of his career appeared in our pages twenty-five years ago[1] under the title of "Hogarth and Quackery." He also figured among "Some Notable Quacks" in the special issue of the *British Medical Journal* published on May 27th, 1911. Mr. S. Wood has recently (May, 1930) contributed to the *British Journal of Ophthalmology* a thirty-page illustrated paper on Taylor, containing a transcript of a manuscript believed to have been written by him, with facsimile reproductions of parts of it. This manuscript is in the Library of the Royal College of Surgeons of England. At the time when Taylor flourished ophthalmic surgery did not go beyond couching for cataract, some plastic operations on the eyelids, and possibly some attention to the lacrymal ducts. Conjunctivitis was also more or less successfully treated. Quack as he was, Taylor became eye surgeon to George the Second, but he left England and died at Prague. His "Life" written ostensibly by his son (who did not formally disclaim the authorship) was a scurrilous publication, by no means creditable to the author or the subject, but according to Mr. Wood the best account of Taylor is to be found in a paper by Mr. George Coats in the *Royal Ophthalmic Hospital Reports* for 1915. Mr. Wood defends Taylor from the accusation of being a mere quack, and credits him with a liberal education in general medicine and a special study of ophthalmology, but all contemporary authorities seem to have been agreed that he was uneducated and ignorant, and the extant account of his self-advertising lectures do not support a claim to culture. Mr. Wood rather gives away his case in defence of Taylor when he admits that "his conceit bordered on the pathological, and on reading his *Travels and Adventures* one is left with a feeling of disgust that a man of his ability could be so childish." Probably he did some good in the world and less harm than his contemporary, "Spot" Ward, for Taylor did not administer irritant poisons as did Ward in his blue, red, and purple antimonial pills, which were believed to have proved fatal in many cases. But a claim to be better than Ward (the statue of the latter in the House of the Society of Arts notwithstanding) is not a claim to excellence.

THE MEDICAL RESEARCH COUNCIL AND ERGOT STANDARDIZATION.

THE Medical Research Council has requested us to make public the following official statement. "The attention of the Medical Research Council (Great Britain) has been drawn to a misleading advertisement, involving misuse of their name, which has been given currency on the American continent in respect of a preparation of ergotamine tartrate known as Gynergen 'Sandoz.' This advertisement states that 'the Pharmaceutical Society of Great Britain, after consultation with the Medical Research Council, adopted Gynergen as the standard for ergot, thus making it the acknowledged leader in this field.' This statement is not true. The Medical Research Council desire to make it plain that they never at any time concurred in, or were consulted about, the adoption of this preparation as a standard. The suggestion made with reference to the Council is therefore entirely without foundation. Further, the current official publications of the Pharmaceutical Society of Great Britain state expressly that for ergot 'the standard is a sample of ergotoxine phosphate which is kept in the dark *in vacuo* over phosphorus pentoxide.' The adoption by the society of this standard, in place of a sample of ergotamine tartrate, was also announced three years ago in a paper by Burn and Ellis (*Pharmaceutical Journal*, 1927, cxviii, p. 384), which constituted a report to the chairman of the International Conference on the Biological Standardization of Certain Remedies."

[1] *British Medical Journal*, 1905, i, 909.

INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY.

The eighth International Congress of Dermatology and Syphilology was held at Copenhagen from August 5th to 8th; almost a thousand members and their friends assembled for its formal opening by the president, Professor Rasch, in the ceremonial hall of the Christiansborg Palace. The King of Denmark was present, and after speeches of welcome by the Prime Minister, the mayor of Copenhagen, and others, the president presented some of the principal foreign delegates.

The first subject of discussion was the etiology and pathogenesis of eczema. Professors Darier (Paris) and Jadassohn (Breslau) analysed the present state of knowledge, both tending to emphasize the importance of the phenomena of sensitization, as did many of the subsequent contributors. Dr. Arthur Whitfield (London) submitted an interesting communication on the subject of autosensitization. Professor Sabouraud (Paris) pointed out that in reality the whole problem was the determination why some individuals were sensitive, while the majority were not. The second day was devoted by the dermatologists to the discussion of papers of varying degrees of interest, among the most important being one contributed by Dr. Barber (London) on recent advances in the investigation and treatment of allergic eruptions. It is possible that he and his colleague Dr. Oriel have isolated a specific antigen upon which these eruptions depend. The early morning of the third day was spent in studying a highly interesting series of clinical cases collected by the local dermatologists, among which various forms of sarcoids and a large number of cases of Darier's disease figured prominently. Subsequently the congress members and their friends were transported in motor charabancs to Marienlyst, one of the delightful little seaside resorts in the neighbourhood of Copenhagen, where lunch was provided, after which all visited the Castle of Cronborg and the ramparts traditionally associated with the ghost of Hamlet's father; they were then taken through charming scenery to the palace of Friedrichsborg, which was also inspected, and back home to Copenhagen. A meeting on August 9th was devoted to the consideration of the treatment of tuberculosis of the skin, the opening paper being delivered by Professor Axel Reyn, who has been continuing the great work initiated by Finsen at the institute which bears his name. The chief point of general interest which emerged from the discussion was that there was a fairly general agreement that the new dietetic treatment of lupus, consisting in the employment of food acid in character and free from ordinary salt, although not without a favourable influence on the disease, was quite insufficient to cure it.

Two days were spent by the syphilologists in considering the more interesting and obscure phases of that protean complaint. It was decided that an important matter for investigation was the case of patients who in spite of careful and persistent treatment continued to have a positive Wassermann reaction. Should treatment be continued indefinitely, or did a time come when it was no longer necessary? Were such patients more liable to relapse than those whose reactions ultimately became negative? Secondly, it was decided that it would be desirable that all nations should adopt the standard notation laid down by the organization of the League of Nations in describing the degree of positivity of the Wassermann reaction. Great Britain had adopted this notation so long ago as 1923, but many other nations had failed to do so. It was felt that if clinicians would demand the adoption of the standard notation the pathologists would be compelled to fall into line. The last day of the congress was entirely devoted to listening to the remaining separate papers. Since in addition to the set discussions there were no fewer than 177 papers accepted by the committee of the congress, it will be readily appreciated that hard work and strict timekeeping were necessary in order that the programme should be completed by Saturday evening, August 10th. This was accomplished, thanks to the masterly organization and excellent arrangements of the local committee. The general secretary, Dr. Svend Lomholt, was indefatigable and ubiquitous, and his efforts were most ably seconded by his colleagues, Drs. Kissmeyer and Haxthausen.

A special word of appreciation is due to the lavish hospitality with which the members of the congress and their friends were overwhelmed. Each evening there was a social function, and during the day arrangements were made to entertain the members' wives while their husbands were engaged in the scientific work of the congress. The social side of the meeting culminated in a banquet on Friday evening; this gave the foreign representatives an opportunity to congratulate the Danish dermatologists on the success of their arrangements and to return thanks for the hospitality which they had received. It was generally agreed that Copenhagen had set a high standard for other cities to attempt in the management of international congresses.

STORAGE OF X-RAY FILMS.

The X-Ray and Radium Protection Committee's Recommendations.

After the disaster at the Cleveland Hospital, Ohio, last year, the British X-Ray and Radium Protection Committee considered the whole matter and issued a memorandum on the handling and storage of x-ray films (*British Medical Journal*, November 16th, 1929, p. 923). At the suggestion of Dr. Stanley Melville, honorary (medical) secretary of the committee, and at the request of a number of correspondents, we now republish the specific recommendations therein set out.

X-Ray Rooms.

In all rooms where x-ray films are handled and stored naked lights and open fires should be prohibited. Smoking should be prohibited in or near film cabinets or film stores. Films should not be placed near steam pipes, radiators, or the like. A ready supply of fire extinguishers, together with buckets of water and sand, should be available. The best means of extinguishing burning celluloid appears to be by the application of water.

Electric light installations should be of a permanent character; electric light bulbs in or near film stores or cabinets should be enclosed in strong glass globes. Generous ventilation should be provided, and, as recommended in para. 5 of the International Protection Recommendations, the plan of an independent exhaust fan in each room is to be preferred to a duct system common to a number of rooms. Doors should be arranged to open outwards, particularly from film-drying rooms and dark rooms.

The stock of x ray films, whether unexposed or developed, should be kept down to the minimum. The stock of film records should be subjected to periodical drastic weeding out, and discarded films should be at once deposited in strong fireproof metal containers with self-closing lids, and destroyed at frequent intervals. They should not be placed in general refuse bins or burnt in a closed vessel. Stocks of unexposed films for immediate use, or current files of developed films, should be stored in cool and dry lock-up thermally insulated metal or hard-wood cabinets. Such a stock should not exceed a total of about 50 lb. (that is, about 1,000 12 in. by 10 in. films) distributed among several cabinets. Cabinets for unexposed films should be lead lined.

Developed films which are temporarily taken into hospital wards or theatres should not be left lying about in table drawers or cupboards, but should be kept in suitable metal containers. Such films should be returned to the x-ray department as soon as possible.

Film Stores.

Stocks of film exceeding about 50 lb. should not be stored in the x-ray department, but in a special, dry, cool, and well-ventilated room reserved exclusively for the purpose. The situation of the film store should not be such as to endanger the means of escape from any part of a building. The store

should not be in the proximity of a lift-shaft or staircase-well, or near an intake or outlet of a general duct-ventilating system. In no circumstances should it communicate with a general duct-ventilating system. Preferably the store should be an isolated single-story building with independent access. Failing that, the store may be placed on the roof of a building or, if that is not feasible, in one of the higher stories in as isolated a position as possible.

The walls, floor, and ceiling of the storeroom should be fireproof and of robust construction. The door should be fireproof and of a self-closing, closely fitting type. If the storeroom forms part of a main building, a useful further precaution is a fireproof vestibule with a second fireproof door. The store should be provided with a direct vent to the outer air, preferably on the side remote from the most adjacent building. Such a vent should not normally be less than a square foot in effective area, a figure which may require to be exceeded for large stores. The vent may be protected against weather, etc., by thin, unwired glass, or other equally frail device.

The store may well be equipped with steel cabinets. If it is designed to carry unusually large stocks of films (exceeding, say, one ton), it should be divided into completely isolated fireproof compartments, each with its own vent and fireproof door. The temperature of the store should be maintained at a moderate figure. If the roof is exposed to the sun suitable thermal lagging may be necessary in hot climates. It seems certain that good quality celluloid does not ignite spontaneously at any temperature attained under ordinary room conditions. The store should be equipped with an automatic water sprinkler device. If windows are provided in a film store they are best situated in a north wall, though other considerations may be more important. Any windows immediately above the windows or vent of the storeroom should be provided with wired glass.

MENTAL TREATMENT ACT, 1930.

THE Board of Control, with the approval of the Minister of Health, has appointed a committee with the following terms of reference:

> To consider and advise what principles should be observed in the approval by the Board of Control of medical practitioners for the purposes of Sections 1 (3) and 5 (3) of the Mental Treatment Act.

The committee is constituted as follows:

Sir John Rose Bradford, P.R.C.P. (chairman).
Sir Hubert Bond, Commissioner of the Board of Control.
R. G. Gordon, M.D., F.R.C.P., British Medical Association.
G. W. B. James, M.D., D.P.M., Royal Society of Medicine.
A. Rotherham, M.B., Commissioner of the Board of Control.
J. S. B. Stopford, M.D., General Medical Council.
R. Worth, M.B., Royal Medico-Psychological Association.

With Mr. H. C. Bleakley of the Board of Control as secretary.

ROYAL MEDICAL BENEVOLENT FUND.

AT a recent meeting of the committee thirty-four grants were made, amounting to £515. Subscriptions and donations are very urgently needed in order that the activities of the Fund may be continued and applicants given the help they need. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1. The following are particulars of a few of the cases helped.

M.R.C.S., aged 80, with wife aged 70. Has been in practice for over fifty years, but latterly, owing to increasing deafness, there was a falling off of patients. The daughter, aged 40, looks after her aged parents. The three live on a total income of £184 a year; £150 of this is contributed by the son, who is a bank cashier at a salary of £425, and has to keep himself in lodgings. Voted £40.

Widow, aged 51, of L.S.A. Her husband, who died in July, was helped by the Fund during the last two years of his life. He was also in receipt of £104 a year from another charity as he was unfit for work and in receipt of the old age pension. The widow has been left with nothing. The allowance of £104 has been discontinued as the widow is not eligible for this help, and the pension has been stopped. The widow has obtained a post as companion at a salary of £1 a week without food. Voted £25.

Widow, aged 63, of M.D. Husband died in 1929, leaving his widow quite destitute, her only support being her daughter, who is earning 48s. a week. Voted £25. Epsom College has also given a pension.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, Tavistock House (North), Tavistock Square, W.C.1.

Ireland.

Coombe Lying-in Hospital, Dublin.

IN the report for 1929 of the Coombe Lying-in Hospital, Dublin, to which a brief reference was made in the *Journal* of May 24th (p. 970), there is an interesting analysis of abnormal cases, with the treatment employed and the results. The total admissions during the year reached 1,204, with 1,080 deliveries; maternal deaths numbered only 11, and of these 10 were emergency cases. The one fatal case in which there had been previous booking of the patient was that of a woman, aged 27, who suffered from mitral stenosis, and who was admitted at the twenty-fourth week of gestation on account of profound anaemia, dyspnoea, and oedema. She improved considerably on liver extract, iron, and digitalis, but left hospital contrary to advice, and was admitted again a few weeks later in a dying condition. Puerperal sepsis was responsible for only one death among the eleven; it developed three days after bleeding from a lateral placenta praevia and delivery of a stillborn infant. In spite of glycerin drainage and a course of kharsulphan, subinvolution was marked, and the patient died on the twelfth day. Other deaths were due to accidental haemorrhage, eclampsia, ruptured uterus, shock following Caesarean section, and such extraneous conditions as cerebral haemorrhage, intestinal obstruction, and ruptured splenic artery. The members of the hospital staff are of the opinion that pelvic contraction is unduly emphasized in the training of medical students, while the signs of disproportion and their interpretation receive insufficient attention. They consider, furthermore, that unnecessary operations can only be avoided by a properly conducted trial labour. During the year there were three examples of pelvic delivery following previous Caesarean section. The first patient had a history of a stillborn child, followed by the spontaneous delivery of a living child at her second pregnancy, and Caesarean section at her third; labour was induced at the thirty-eighth week of the fourth pregnancy, and she was delivered of a living child weighing 6¾ lb. The second patient had a history of three stillbirths, followed by Caesarean section for delivery of a child weighing 9¾ lb.; in her fifth pregnancy labour was induced after the thirty-eighth week, with delivery of a 7½ lb. child. In the third case Caesarean section had been performed in a previous labour for posterior asynclitism; during the second pregnancy there was no evidence of disproportion, and she was delivered of a 7¾ lb. baby at term. The three cases give an indication of the value of individual consideration, not only of every case, but of every pregnancy of the same case. Forceps delivery was used in forty-eight labours, and it is interesting to note that among these there were only two deaths, both occurring in patients brought in as emergencies with accidental haemorrhage. Morbidity followed the use of forceps in six patients, but with recovery in every case; gonococcal infection was present in one of them, and suspected in another. Stillborn children were obtained in four cases, and five died at or soon after birth. Breech presentations occurred in 21 cases, not including twins; of these, six babies were stillborn and two macerated. Of the six stillborn, one was anencephalic, one had a prolapsed cord on admission, and the third case was sent in after repeated vaginal examinations, and was followed by morbidity in the mother after delivery. Perforation of the aftercoming head was necessary in three instances. An interesting case of chorea gravidarum was only seen at the onset of labour, and improved rapidly with recovery in ten days. The patient was treated for three days with 10 c.cm. of serum daily from patients in labour. In extern maternity work 1,432 deliveries were attended with only two maternal deaths. In the gynaecological department 304 operations were performed; *x*-ray and radium treatment were given in 16 cases and palliative treatment in 41. Three deaths occurred, one following Caesarean section for labour obstructed by round-celled sarcoma of the vagina; the other two deaths were due to peritonitis.

School Medical Inspection in the Irish Free State.

In the report of the Department of Education (Irish Free State) a survey is made of the medical inspection of school children. The report states that medical inspections in the Dublin schools during the year revealed 10,642 defects requiring treatment, and 4,057 necessitating observation—a total of 14,699 defects. Decayed teeth accounted for 6,996 of this total; there were 2,293 cases of enlarged or septic tonsils and adenoids, and 2,240 cases of diseases of the eye. The parents of children needing immediate treatment were advised to make use of the city hospitals, the choice of the institution being left to the parents themselves. The extent to which this arrangement was taken advantage of is revealed by the returns received from the hospitals. During 1929 the number of children treated for defective vision was 986, and of these 854 were supplied with glasses free of charge; 350 children were treated for external eye disease; 1,108 children had septic tonsils or adenoids removed; and 3,718 children were treated for defective teeth. In Cork city, where a scheme of medical inspection has been in operation since 1924, the number of school children examined during 1928 was 2,208, and the following defects were noted: nose and throat, 453; defective vision and affections of the eyes, 633; and dental caries or other defects, 3,531. In the borough of Clonmel six schools had come under the operation of the scheme of school medical service, and thirteen inspections were made during 1929. The number of children inspected was 1,483, and the following figures are recorded: number of children suffering from defective teeth, 940; from goitre, 26; from enlarged tonsils and adenoids, 185; from tuberculosis, 3; from serious defects, 6; from malnutrition, 12; and from anaemia, 31. The number of children badly kept was 25. In County Cork 10,829 children were examined in 1929; of these, 6,133 individual children, or 56.6 per cent., suffered from defects which required treatment or observation. A total of 9,683 defects were discovered, of which 6,238 required treatment; 2,754 children (25.4 per cent. of the total number examined) suffered from more than one defect. There were 2,899 cases of dental disease, 1,781 cases of nose or throat diseases, 989 cases of defective vision (including squint), 817 cases of uncleanliness, and 659 cases of malnutrition. Only a trifling number of parents attended at the inspection, but it is stated that there had been evidence at the re-inspection of various schools of considerable remedying or improvement of the defects noted at previous inspections. In County Kildare the inspections were very well received. Over 95 per cent. of the children actually attending the schools were presented for examination, and the parents of nearly 50 per cent. of the children examined were present at the inspections. The examinations disclosed the following conditions: defective teeth, 3,081; enlarged tonsils and adenoids, 1,212; defects of the eye, 1,094; and malnutrition, 730. In County Louth the results of the inspection showed: dental caries, 51 per cent.; diseased tonsils and adenoids requiring special treatment, 16 per cent.; minor throat conditions, 13 per cent.; defective vision, 6.3 per cent.; squint, 1.9 per cent.; and other diseases of the eye, 1.1 per cent.

Northern Dispensary Doctors and Medical Benefits.

In view of the early introduction of medical benefits in Northern Ireland the medical officers of certain Northern dispensary districts desire an alteration of hours. The matter was referred to at the meeting of the Newtownards Board of Guardians recently, when a suggestion was made by the medical officers of the various dispensary districts for a change in the dispensary hours. The guardians, however, in a subsequent discussion, dealt with the matter as though the dispensary doctors had asked for a reduction in the hours of attendance; owing to this misunderstanding it was suggested that the doctors should accept reduced salaries if granted a reduction in the hours of attendance. The clerk pointed out that the doctors were making no application for a reduction in the number of hours, but only that their times of attendance should be altered.

England and Wales.

London Ambulance Service: Conveyance of Maternity Cases.

Now that the London County Council is responsible for a combined ambulance service, including its own accident service and the services lately controlled by the Metropolitan Asylums Board and some of the boards of guardians, the question of the arrangements for the conveyance of maternity patients to hospitals has been considered. The "accident" ambulances have hitherto carried parturient women free of cost, if the case is an urgent one, and provided that either a doctor or a midwife accompanied the patient. They have also carried non-urgent maternity patients between the hours of 11 p.m. and 8 a.m. on the production of letters of admission to the maternity hospital; in such cases it is sufficient for a female friend to accompany the patient. It does not appear to the Council that there is any evidence that a day-time ambulance service for non-urgent maternity patients is needed. Six borough councils have asked that such a service should be instituted, but beyond a general expression of opinion they have brought forward very few supporting circumstances, while nine borough councils considered that there was no need for such an extension. It is not thought advisable at present to make the general ambulance service, which deals with the transport of patients, infectious and non-infectious, to and from the Council's hospitals and institutions, available for non-urgent maternity patients, though this will probably come about in time after the necessary rearrangements have been completed. Meanwhile any arrangement for the conveyance at the public cost of non-urgent maternity patients during the day-time is regarded as the responsibility of the several metropolitan borough councils as authorities under the Maternity and Child Welfare Act. The London County Council is prepared to place its ambulance service at the disposal of such patients if a metropolitan borough council desires it, provided it undertakes to pay an agreed sum, and that the service is limited to patients approved by the borough medical officer of health.

Co-ordinated Hospital Service for Leeds.

A scheme has been approved for the utilization of the Poor Law institutions of Leeds for general medical treatment in accordance with the provisions of the Local Government Act. The Poor Law hospitals of Leeds are three in number—namely, St. James's, St. Mary's (Bramley), and the Rothwell Infirmary; they will be transferred from the public assistance committee to the health committee to form part of a public hospital service whereby the congestion in the voluntary hospitals of the city may be relieved. St. Mary's Hospital is old, out of date, and unsuitable for modern purposes. St. James's Hospital, on the other hand, in size, structure, lay-out, equipment, and staff, is capable, with certain alterations, of being adapted for the reception of the acutely sick, and it also has the advantage of a central situation. In recent year it has been managed by the guardians more or less on the lines of a general hospital, with a staff of physicians and surgeons of consulting rank, all except one of them being on the staff of the Leeds General Infirmary. Modern *x*-ray and ultra-violet radiation apparatus has been installed; there is an operating theatre, and also a laboratory with a trained pathologist. It is proposed to transfer a proportion of the infirm sick at present in St. James's Hospital to the other two institutions, so as to make available a surplus of beds to meet the demand for the accommodation of the acutely sick. An out-patient department will also be instituted at St. James's Hospital, which will deal only with patients who have already received treatment in the hospital and still require a certain amount of after-care. Such a department, it is thought, will not only add to the effectiveness of the treatment, but will have the effect of curtailing the period of residence of some patients, and thus of indirectly increasing the total bed accommodation. Under the rearrangement St. James's

Hospital is expected to be able to deal with 12,000 in-patients every year. The reconstruction of St. Mary's Hospital, which in the meantime will serve with Rothwell Infirmary as a hospital for the infirm sick, is regarded as a necessary development of the hospital system of the city in the future. These proposals are considered to form a basis on which a really sound and efficient public hospital service can be built to meet the present and future needs of the city.

National Council for Maternity and Child Welfare.

Among the many activities of the constituent bodies of the National Council for Maternity and Child Welfare is the maintenance of two complete travelling exhibitions, which are concerned with many aspects of child welfare. They include a section on clothing, where model garments for infants and young children may be examined by mothers, while a food section conveys instruction about the nursery diet, the vitamin-containing foodstuffs, and the production of clean milk. There are also dental exhibits, photographs of the care and cure of crippled children, a day nursery section, and an effective chamber of horrors, illustrating a number of common dangers, and indicating how they may be avoided. The exhibition can be packed in four large hampers in half a day, and travels from town to town under the care of a lecturer. It is usually open for two or three days, sometimes for a week or two. Arrangements are made for the elder school children of the district to visit it in the mornings for special lectures and demonstrations, the afternoons being reserved for women. Lantern lectures are given wherever possible. During 1929 the exhibitions are reported to have been enthusiastically received; in one town half of the entire population—about 10,000 people—is said to have visited the exhibition hall in the course of a single week. Another constituent body of the council is the Blind Babies Department of the National Institute for the Blind. The education of the child blind from birth demands special qualities in the nurse and teacher, because there is no basis of vision on which to build up concepts. Three centres, known as the Sunshine Homes, are now provided for these infants, under the charge of a staff which trains the senses of touch and hearing, correlating them with underlying ideas. When these children are ready to pass on to a blind school, at the age of 5, they have learned "how to be blind," in the sense that they are essentially independent and self-reliant. The homes do not admit mentally defective children; they aim to be schools rather than asylums, and to give the blind child the opportunity of learning to share in the life of the community.

Wingfield Orthopaedic Hospital.

In a leading article in the *Journal* of December 12th, 1925, the second edition of Mr. G. R. Girdlestone's pamphlet, *The Care and Cure of Crippled Children*, was discussed. The scheme for the treatment of the cripples of Oxford and Bucks is well known, and there is no need to recapitulate its details. In the annual report of the Wingfield Orthopaedic Hospital, Oxon., just published, Mr. Girdlestone now records progress to the extent of an increase of patients treated in the hospital (which is the central one of the scheme) of 20 per cent., and of the out-patients attending clinics of 30 per cent. This last figure probably does not mean an increase of crippling disease, but an improved consciousness of the need of following up cases. This is likely to be the result of the reorganization of the Federation of Clinics under the name of the Berks, Bucks, and Oxon. Association for the Care of Cripples. Readers of this report are reminded that the work at the Wingfield Hospital includes vocational after-training, and that the Wingfield Workshops entered in four classes in competition at the International Exhibition of Cripples' Handicrafts held at Exeter last autumn and obtained three first awards for bootmaking and repairing, and (notably) surgical instrument making, and lamp shades. In addition, the workshops won the principal trophy of the exhibition presented by the Council for the Care of Cripples, for the best piece of work submitted by a British institution. These are encouraging facts, and show that the Oxfordshire central hospital is still leading the way. The medical and surgical staffs of the Royal Berks, Royal Bucks, and King Edward VII (Windsor) Hospitals have co-operated with the Wingfield Hospital throughout the past year. The work of the honorary surgeons is of paramount importance, but the devoted work of the honorary secretaries, committees, and helpers at the clinics has been of the greatest value, and indeed is indispensable. The average attendance at the hospital school was ninety-six. During 1929 481 operations were performed, the majority involving section of bone, and the variety and importance of the parts concerned give some idea of the value of the work done. Tendon transplantations were forty-seven, but osteotomies for bow-legs and knock-knees only twelve. It is to hoped that this last low figure means that rachitic deformities of bone are much less common than they were in the counties concerned. It is generally accepted that they are becoming rare in London, but there are wide variations of prevalence of the disease in different parts of the country.

The Leasowe Open-air Hospital for Children.

Study of the value of artificial light in the treatment of surgical tuberculosis has produced some interesting results at the Open-air Hospital for Children at Leasowe in Cheshire; a report on 224 cases was submitted to the Board of Education at the end of 1929. Except in the case of tuberculous adenitis after curetting, no evidence of any specific action of artificial light upon cases of tuberculous disease was definitely established. The value of this form of therapy seems to lie in the improvement in the general health following generalized irradiation; local irradiation with the mercury vapour lamp is considered to assist and hasten recalcification of bone during convalescence, and to promote the healing of sinuses. Experiments are being conducted to decide whether artificial light therapy has any influence on calcium retention within the body in cases where the total calcium intake and output can be estimated, since this would throw much light on the improvement in the rate of recalcification. The use of light therapy in tuberculous adenitis and peritonitis appears to shorten the duration of the stay in hospital, according to the statistics of the past two years, but deep-seated abscesses seem to be unaffected by either local or general irradiation. In the case of superficial abscesses there is some evidence that a carefully controlled dosage may induce absorption. Investigations of amyloid disease are proceeding at the hospital; the degree of retention of a dye injected intravenously is said to afford a measure of the extent of amyloid changes in the body. An attempt is being made to determine whether the alleged hastening of amyloid change under ray therapy actually occurs. During 1929 more than 200 patients were discharged from the hospital, of whom 86.6 per cent. left with the disease quiescent. Statistics of old cases show that of 110 patients discharged with quiescent lesions in 1926 94 per cent. are now known to be fit; in 1927, 132 patients were discharged, and of these 91 per cent. are now fit, while of the cases for 1928 the percentage is 95.3.

The East End Maternity Hospital.

The clinical report of the East End Maternity Hospital for the year 1929 is made up of statistical tables, the most important of which refer to the presentations and obstetrical complications met with during the period under review, and the operations that were performed in the out-patient and in-patient departments in the hospital. In the previous year 1,276 mothers had been delivered in the hospital, that being the record number in any one year; in 1929 the total reached 1,310, though the number of out-patients dropped from 788 to 610. The number of births in the hospital was 1,325; on the district it was 612. There was one case of Caesarean section for contracted pelvis, the other obstetrical operations including 58 inductions, 75 forceps deliveries, 4 versions, 15 manual extractions in cases of breech presentation, and 25 in which the placenta and membranes were removed by hand. The obstetrical

complications comprised the following: 21 cases of accidental haemorrhage, 6 of placenta praevia, 17 of puerperal pyrexia, and 3 deaths. One of the deaths was in an unbooked case of abortion with severe concealed haemorrhage at twenty-four weeks gestation; another was in a patient who was admitted at thirty-two weeks gestation with severe bronchitis and albuminuria, and the third in a woman who had been under the care of her own doctor for influenza and died at the moment of delivery. There were 32 neo-natal deaths—26 among infants born in the hospital, 6 on the district; 49 infants were stillborn—36 in the hospital, 13 on the district. Of the 1,262 survivors, 1,185 were over birth weight on discharge, 62 were equal to birth weight, and 15 were under birth weight. During the year the attendances at the ante-natal clinic totalled 7,811, 1,379 of these being made to the medical officer's clinic. The following complications due to childbearing were treated during pregnancy: 56 cases of albuminuria, of which 33 were treated in hospitals and 23 at home, 1 case of hyperemesis, 5 of pyelonephritis, 3 of bacilluria, 4 of chronic nephritis, 14 of purulent vaginitis, and 27 of dangerous varicose veins. In addition, 63 cases of diseases not due to childbearing were treated at the ante-natal department.

Cumberland Infirmary Extensions.

Two new wards for in-patients and a pathology department were opened at the Cumberland Infirmary on July 31st by Lord Howard of Penrith, with Mr. W. Theodore Carr, president of the infirmary, in the chair. The wards have been named the "Balfour Paul," and "Woodside" wards, the former being presented by members of the family of the late Mr. C. Balfour Paul—for many years honorary surgeon to the Cumberland Infirmary—and the latter by Mr. Andrew Gibson, Woodside, Carlisle. The pathology department has been erected out of funds provided by the Carlisle Pageant Committee, and generous contributions have been made for its maintenance, including £1,500 from Mr. P. H. Holt of Yrithbie, Annan, who originally initiated the scheme. Referring to the work that had been done at the infirmary since the foundation stone of the central building had been laid over ninety years ago, the president said that the institution and its staff had played a very important part in the development of antiseptic surgery, and in the evolution of the use of anaesthetics. It was in Carlisle that Lister had accidentally discovered that carbolic acid was being used to take away the smell of the local sewage, a fact which had suggested its application in surgical operations. Since 1919 extensive improvement had been made in the facilities for the treatment of disease and injury, so that the hospital was now among the most efficient in the country. The president expressed the hope that it might soon become a school for nurses, and provide the medical profession with opportunities for post-graduate study. With the opening of the new wards the extension scheme of the infirmary has now been completed, at a total cost of £55,000. Each of the new wards accommodates fourteen beds, and is of fire-proof construction, being built of bricks and rough-casting, with slated and asphalted roofs. The floors are of polished pitch pine, and the absence of corners prevents the accumulation of dust. Both have small independent wards attached, one with two beds and the other with three, constructed on the same style as the main wards. Near the Balfour Paul ward a chemical room has been fitted up, and a bed-lift can be operated between the new ward corridor and the ground floor passage. A special room, equipped with steel lockers, has been set apart for storing patients' clothing. The new wards are connected by a corridor with the infirmary buildings, and by a flight of steps with the out-patients' department. The pathology department, which is a building about 70 feet long and 40 feet wide, has been erected on an independent site to the north of the infirmary. It has a well-equipped laboratory, and a balance and a sterilizing room with the necessary apparatus in addition to offices and stores. Gas, water, and electric light and power fittings are all of stainless metal. To commemorate the services of Mr. James Carr, who was a member of the infirmary governors for many years, a special ward for nurses—to be known as the Margaret Carr ward—has been erected in conjunction with the Balfour Paul and Woodside wards. It contains three beds, which will be reserved for sick nurses. The Page ward, which is now in course of extension, will ultimately be divided into two sections, one for men and the other for women, where special treatment will be given for diseases of the ear, nose, and throat. The alterations are estimated to cost about £2,000.

Artificial Light Treatment for Tuberculosis in Lancashire.

In a report, recently presented to the Lancashire County Council, Dr. G. Lissant Cox, central tuberculosis officer, gives an account of the treatment of non-pulmonary tuberculosis during 1929 at twelve of the county tuberculosis dispensaries where artificial light centres have been established. The apparatus employed in the majority of cases consisted of two carbon arc lamps, one of a sun ray pattern for general treatment, and a Kromayer mercury vapour lamp for local treatment. In obstinate cases ancillary forms of treatment, such as curetting, cauterizing, and aspiration, were found helpful. Dr. Cox concludes from a survey of the year's work that the artificial light treatment continues to give favourable results, particularly in cases of tuberculosis of the skin, and tuberculous adenitis with abscess formation and skin involvement; 60 patients suffering from lupus and scrofuloderma were cured out of 109 who began treatment during the year, while 87 out of 133 were treated with apparent success for the second condition during the same period. In 60 cases of skin disease which became "quiescent and apparently cured," the average duration of the disease before the patients began light treatment was ten years eight months; treatment was given for ten and a third months on an average. The report draws attention to the fact that of 252 patients who showed apparent recovery on finishing treatment in 1929 the consultant tuberculosis officers would normally have recommended 211 for treatment at hospitals. By their treatment at dispensary light centres about £2,552 is estimated to have been saved. It is also emphasized that most of the patients were able to continue their normal occupations during the course of treatment. Patients attending the centres during 1929 numbered 842, as compared with 726 in the preceding year.

Scotland.

Survey of an Influenza Epidemic at St. Andrews.

An account of an epidemic outbreak of "influenza," which affected 759 persons, is given by Dr. G. Matthew Fyfe, medical officer of health for St. Andrews, in his annual report for 1929. The information was collected by the clinical staff of the James Mackenzie Institute for Clinical Research, the members of which are in general or specialist practice in the town, and are therefore in a position to report upon conditions affecting all sections of the community. Sporadic cases of an acute febrile illness appeared between January 7th and 10th; by February 1st 40 per cent. of the children were absent from the schools, and it was not until March was well advanced that normal conditions prevailed. The comparatively mild course of the disease and the relative absence of fatal result differentiated the outbreak from the acute epidemic influenza prevalent in 1918-19, while it was distinguished from ordinary winter cold by the high incidence, sudden onset, and the marked prostration which followed the subsidence of the acute symptoms. In the majority of cases the incubation period seldom exceeded forty-eight hours. Infection of an entire household, even under conditions of overcrowding, was exceptional. At the beginning of the outbreak, adults, especially young adults, were more severely and more frequently infected than children. Routine bacteriological examinations furnished no definite conclusions. Attempts to isolate *Bacterium pneumosintes*, as described by Olitsky and Gates, were unsuccessful. In some instances an organism morphologically resembling Pfeiffer's bacillus was observed in mixed culture, but attempts at isolation failed. Pneumococci were detected in other cases.

In many, a streptococcus was found, insoluble in bile, producing a green coloration on blood agar; it occasionally appeared as large diplococci varying in sugar reaction and with chains not always reacting uniformly to Gram's stain. Animal experiments were not undertaken. The only conclusion reached was that a pleomorphic streptococcus seemed to be related to the infection, though the relationship may have been very remote. None of the usual drugs had any marked effect upon the course of the disease. Various prophylactic measures were tried, most of them without success. Persons who had received prophylactic inoculations proved no more resistant than others. Some whose throats were daily painted with iodine were attacked, but regular gargling had some effect in warding off the disease. Considering its incidence, the death rate was remarkably low; six deaths were reported altogether, five of these being of persons over 60 years of age. No relationship was established between the outbreak and the prevailing climatological conditions, but there were indications that fewer cases occurred and that patients felt better in dry, frosty weather. Another matter referred to by Dr. Fyfe in his report is the organization of the national health insurance scheme, which he considers is in need of revision. From a study of panel records he thinks that the administration of the Act should be more intimately linked up with the administration of public health. If the work of the general practitioner was co-ordinated with that of the medical officer of health, their concerted efforts, in his opinion, would enable a thorough investigation of the health of the nation to be made.

The Royal Samaritan Hospital for Women, Glasgow.

Gynaecologists and others engaged in hospital work will be interested in the statistical report of the Royal Samaritan Hospital for Women, Glasgow, for 1929. This institution came into being in 1886, and ten years later was rebuilt; new wings were added in 1906 and again in 1927, and the present report represents the first account of a full year's work of the hospital since the most recent extension. The classification of the figures presented obvious difficulties, and it was not found possible to devise a strictly anatomical or pathological basis. Four main headings are therefore employed—namely, diseases restricted to one of certain regions of the genito-urinary tract; diseases affecting more than one such region; related diseases outside the genital and urinary tracts; and conditions not classified in the foregoing groups. Where the disease was restricted to a definite region a sub-classification has been employed—namely, (1) disorders of function without macroscopical changes and developmental errors; (2) conditions resulting from infection and calculi; (3) hypertrophy, hyperplasia, neoplasms, and cysts; (4) circulatory disturbances; and (5) diseases associated with pregnancy. The second main heading comprises: malformations and developmental errors; diseased conditions resulting from infection; and obstetrical and other injuries such as prolapse, displacements, fistulas, and hernias. Diseases outside the genital and urinary tracts include: primary and secondary anaemia; cardiac and pulmonary conditions; and diseases of the alimentary canal, particularly appendicitis and haemorrhoids. The number of patients dealt with was 2,841, and a detailed list is supplied of the various conditions encountered. The etiological evidence is tabulated, reference being made particularly to the association or otherwise of childbearing, developmental errors, and the incidence of new growth.

James Murray's Royal Asylum, Perth.

In 1827 there was brought into existence, in Perth, James Murray's Asylum, and subsequently it was incorporated by Royal Charter. The nominal number of available beds at present is 200. In the hundred and third annual report of this institution, for the year ended March 31st, 1930, Dr. W. D. Chambers, the physician-superintendent, states that at this date there were 181 patients on the registers of the institution, of whom 177 were resident. A number of new patients were refused admission during the year owing to lack of accommodation, but a new reception hospital, in course of erection at Gilgal, is expected to be available in a few months. In the twelve months under review 81 patients were admitted (42 men and 39 women); 70 were discharged; and 22 died. Voluntary admissions constituted 70.4 per cent. of the total admissions, male patients numbering 30 and female 27. Among the causes which were considered to have been wholly or partly responsible for the mental breakdown were adolescence in 14 cases, the climacteric in 13, and the senile or pre-senile period in 12 cases. In 15 cases the symptoms were affected by alcoholism, and in one case by addiction to morphine. There were 3 cases of epilepsy, 5 of syphilis, 4 of influenza, and 1 of encephalitis lethargica. Of those discharged, 17 certified and 20 voluntary patients had recovered, and 27 were relieved. The average age at death was 65.2 years, the death rate being 12.4 per cent. of the average daily population. In a postscript to the report Dr. Chambers refers to the fire in April which destroyed the roof of the east wing, and draws attention to the fact that much more extensive damage was prevented largely by the sound fire-proof structure of the building. The loss has been assessed at approximately £2,400. It is recalled that after a previous outbreak of fire in 1837, which destroyed the roof of this same wing, the then directors rebuilt it with fire-proof arches, a policy which has now proved to be most wise, since otherwise the recent disaster would have probably resulted in the destruction of the whole wing.

Correspondence.

A NATIONAL MATERNITY SERVICE.

SIR,—The interim report of the Departmental Committee on Maternal Mortality, as reviewed in the *Times* of August 6th, is a little difficult to understand, since the results of its investigations into the causes of maternal deaths and the remedies suggested seem to bear no logical relationship to each other. The one important exception is the clause urging the better teaching of obstetrics. As this, the most sensible clause, will, if carried out, not involve the expenditure of public money, or provide bureaucrats with a job, or bring glory to the politicians, it will probably be the least popular with the authorities.

The following facts are, according to the *Times*, the chief evidence on which the committee has based its conclusions. (1) That the maternal death rate is 4.3 per 1,000. This figure can scarcely be called alarming. (2) That in the United States (where the cult of health almost amounts to a disease) the maternal mortality is 8.3 per 1,000, while in France, where, one is given to understand, medical facilities are not of the high standard provided in England and Wales and the United States, the rate is only 2.5. (3) That in England and Wales since 1911–15 the rate has risen from 4 to 4.3 per 1,000. (4) That overcrowding and dirty conditions have no appreciable relation to puerperal sepsis.

In face of these findings, why does the committee recommend the establishment of a general maternity service (midwifery service would be a more accurate name for it)? Ante-natal care and asepsis have been practised on a growing scale for a number of years, yet not only have they failed to reduce the mortality rate, they have failed to prevent a slight increase.

The review of the interim report in the *Journal* of August 9th quotes none of these findings, but it does quote some other figures which may be misleading: thus 48 per cent. of maternal deaths are said to be preventable. These are classified in four groups: (1) deaths resulting from omission or inadequacy of ante-natal management; (2) deaths resulting from errors of judgement in management; (3) deaths due to lack of reasonable facilities; and (4) deaths due to negligence on the part of patients. Of these, only those in the third group might be prevented by the provision of a general midwifery service. Of 2,00 cases investigated 64 were put into this group; that is to say, only 3.2 per cent. of maternal deaths might be prevented by a general service. Since the maternal mortality rate is 4.3 per 1,000, this means that the rate would fall by less than 0.2 per 1,000, so that if each birth

cost only £2 2s., it would cost the community 10,000 guineas to save one life.

This is a very heavy burden to put upon a country already tottering on the verge of bankruptcy. The benefit that might be derived from such colossal expenditure is, on the available evidence, too slight to warrant the risk of a financial catastrophe, for bankrupt England would become a shambles, compared to which the Reign of Terror would seem as peaceful as the annual outing of a philanthropic society.—I am, etc.,

Rutland, Aug. 10th. G. H. CRISP.

TECHNIQUE OF INJECTING VARICOSE VEINS.

SIR,—As the writer of a brief letter, some three years ago, to the *Journal* recommending the use of intravenous sclerosing solutions for varicose veins, more especially in treating varicose ulcers and dermatitis, and one who has used this method extensively, I have been very interested in the recent communications on this subject appearing in the last few issues. I rarely encountered cases which did not respond to quinine urethane solution, if given in sufficient amount, but in those that did not do so I found that sodium morrhuate in 10 per cent. solution with phenol 0.5 per cent. invariably worked.

Regarding the occurrence of any untoward symptoms, such as hypogastric cramp-like pains (? uterine) or fainting, I have had none of the former with sodium morrhuate, but in a few faintness came on in a few seconds after injection with both these solutions when given to the same patients. In such I think this is often due, especially in using sodium morrhuate, to fear or apprehension in nervous persons.

I prefer to have the patient sitting on an ordinary chair, as mentioned by Dr. Scott in his article in the *Journal* of July 12th, and to make the injections from below upwards. By this means it is much easier to enter the vein, and, what is more important, to be sure that the needle remains in it during the injection (by withdrawing the plunger of the syringe and noting if blood flows into the barrel). If one performs the injection in this position, when the patient has not been walking about too much just previously, or has been wearing supporting bandages and removes these immediately on sitting down, then I find there is just sufficient distension of the veins to permit easy access, and the solution injected is not too much diluted by the residual blood in the vein to be effective. I now prefer 10 per cent. sodium morrhuate, since I find it more satisfactory than the 5 per cent. solution. The 5 per cent. strength is useful for small veins. Probably the reason for my considering the stronger solution more satisfactory is that, owing to my usually injecting the veins when partially filled with blood, as above, the solution becomes too diluted to cause a chemical endovenitis unless I use the stronger one. For varicose ulcers, and some cases of varicose dermatitis, I find a local dressing of "anasthesine" (Hoechst) often helps to allay the pain and irritation while the veins concerned are being dealt with.

One other point that I think is of importance in treating patients sitting on a chair, when using sodium morrhuate solution, is not to apply any constricting bandage to the limb for at least three hours afterwards, but merely to seal the puncture wound. By putting on a tight bandage at once after the injection the fluid thus introduced is apparently often forced out of the veins before it has had sufficient time to affect their endothelium, or it only remains in too weak a dilution to be effective. After this period a bandage may be applied; it helps to cause the walls of the veins to adhere and obliterate their lumen. When using quinine urethane solution I give the injection sitting; after a few seconds I raise the limb to a horizontal position, retain it there about a minute, and then let it drop, repeating this procedure two or three times before bandaging the leg up.

I find about 2 c.cm. of 10 per cent. sodium morrhuate solution for each injection to be an average amount to give, and frequently give 10 c.cm. altogether at one sitting. With reference to its main advantages, as compared with sodium salicylate or quinine urethane solutions, they are five in number—namely: (1) less toxic; (2) much less bruising or tendency to haematoma resulting from its use; (3) if any escapes into the perivenous tissues there is less likelihood of a slough resulting; (4) produces a similar end-result quicker than either of the other two; (5) owing to the oily nature of sodium morrhuate it is more suitable for a lubricant for the piston of a syringe. After use I cleanse the syringe with ordinary water, and then put it in "surgical spirit" (John Richardson and Co., Leicester); this fluid prevents corrosion and discoloration as occurs with ordinary methylated spirit, owing to there being some oleum ricini in the former. I do not use a tourniquet, except in rare cases.

If any fluid should escape into the surrounding tissues during the injection, as evinced by the patient complaining of a burning sensation or a stinging pain at the site, I find the best thing to do, in order to prevent a slough resulting, is to leave the needle *in situ*. I first endeavour to aspirate the fluid injected, usually without much success, then to inject some normal saline solution quickly and aspirate this if possible in a few seconds; I repeat the process two or three times, and then withdraw the needle, letting the blood escape freely from the puncture wound for about a minute. Finally, I massage the part involved for five minutes. By this means an effort is made to remove rapidly or else dilute any remaining fluid as quickly as possible.

One can generally tell almost at once after injection into a vein whether it is going to be successful or otherwise, since the patient mentions, usually within a few minutes, something in the veins, variously described as warm running water, pins and needles, etc. With sodium morrhuate solution one can frequently see and feel the area of vein that is going to be affected by the injection, as it swells up and becomes hard to the touch. I noted when using quinine urethane solution that occasionally fine fibrillary muscular twitchings occurred over the area where the patient stated he felt "pins and needles," etc.; more especially does this happen in the feet. I have not, as yet, used lithium salicylate solution 30 per cent., as mentioned by Dr. Scott, and I would like to know if he finds it to be locally very toxic should any escape into the perivenous tissues. At times, however careful one may be, some of the solution injected will migrate into surrounding parts, probably owing to thin-walled veins and loss of their normal structure.—I am, etc.,

Leicester, July 27th. F. A. E. SILCOCK, M.D., D.P.H.

SUBACUTE COMBINED DEGENERATION OF THE CORD.

SIR,—The names of Professor Gulland and myself appear frequently in the very interesting article by Dr. J. P. McGowan on subacute combined degeneration of the cord in primary anaemia of the fowl in the *Journal* of August 9th (p. 204). I should therefore be obliged, in Professor Gulland's absence, if you would publish the following observations by myself on it.

Dr. McGowan has reported the occurrence of marked siderotic changes and of alterations (quantitative and qualitative) in the bone-marrow in seven cases of subacute combined degeneration of the spinal cord in fowls. In only one of these cases was any marked anaemia present. I have had no experience of pernicious anaemia in fowls, but this finding would be remarkable in the human subject, in whom such bone-marrow abnormality is invariably accompanied by a high degree of anaemia. Further, siderosis in the human subject is evidence either of excessive blood destruction or of defective blood formation, and in either case clear evidence of anaemia is present during life. In pernicious anaemia during the remission stage (that is, when little or no anaemia is present) the bone-marrow returns to the normoblastic mode of blood formation, and becomes indistinguishable from marrow found in healthy patients. At a necropsy last year on a patient suffering from pernicious anaemia, who had died as the result of an accident at a time when he had a practically normal blood count, no siderosis was found in any of the organs, and a diagnosis of pernicious anaemia could never have been made from the post-mortem findings.

With regard to the central nervous system changes described by Dr. McGowan, it is impossible to say from his illustrations whether they are analogous to the changes occurring in the human being. The method used for staining the sections was Marchi's, which, although excellent for showing degenerating myelin, is of no value for demonstrating the presence or absence of astrocytic activity and neuroglial formation. Weigert's neuroglial fibril stain, or Cajal's gold chloride impregnation method, is required for this purpose. Accordingly, unless this has been carried out (and Dr. McGowan makes no statement to this effect) it is impossible to attach much weight to the statement that no neuroglial proliferation was present. From what has been stated, the question whether the blood and central nervous system changes occurring in fowls are identical with those of human pernicious anaemia must for the present remain doubtful.

Dr. McGowan's hypothesis regarding the etiology of pernicious anaemia may be summarized thus. The specific type of bone-marrow change in pernicious anaemia is produced by a toxin, and the changes in the central nervous system, stomach, and liver are the result of anoxaemia of these tissues, consequent upon the anaemia. The toxin theory of pernicious anaemia is one of the oldest theories existing, and one which I, as a bacteriologist, always hoped would prove to be the correct one. After several years' work on the intestinal flora in cases of pernicious anaemia, and after a careful review of the literature dealing with the toxin theory, we were forced to discard this view owing to the absence of any proof as to the nature, source, and mode of action of the hypothetical toxin. Dr. McGowan has returned to the toxin theory without attempting to bring forward any evidence on which to base his contention. He agrees with our statement that in the liver there is present an agent which is necessary for normal blood formation. The essential point of his contention, however, is that the primary cause of the upset of marrow function met with in pernicious anaemia is a toxin, and that the amount of specific factor produced by the still normal liver is insufficient to control this abnormal marrow. Further liver deficiency may now, he admits, be brought about by the anaemia resulting from faulty marrow function, and thus a vicious circle is established. It appears simpler to explain the marrow changes by a mere deficiency of the specific factor, without the addition of a hypothetical toxin of whose existence we have no evidence. That a deficiency of the specific factor is the essential feature in the production of pernicious anaemia is shown by the fact that replacement therapy causes a return to normal blood formation. The problem whether the original site of manufacture of the specific factor is the liver itself, as suggested by Dr. McGowan, or whether the deficiency is due to defective protein metabolism in the stomach, as suggested by Castle, is one which we have discussed in full in our monograph, and which still remains unsettled. We are inclined strongly, however, to the latter hypothesis, and believe that the specific factor is merely stored in glandular organs, particularly in the liver (because of its size and of its normal storage functions), and also in the stomach and kidneys.

Dr. McGowan states that the pathological changes in the spinal cord and stomach are the result of an anoxaemia, secondary to bone-marrow changes. This appears to us to be in direct conflict with certain fundamental facts universally recognized by all who have made a study of pernicious anaemia in human beings. Dealing first with the central nervous system, it is beyond dispute that severe cases of subacute combined degeneration occur in which the blood count and blood picture may be normal, and which have never previously shown any symptoms or signs of anaemia. Accordingly, if anoxaemia is present in such cases, it must be of relatively small degree. In many of these cases there is no history of any previous period of any kind of ill-health whatsoever. We cannot agree with the analogy drawn by Dr. McGowan from the case of the fowl, in which apparently a considerable degree of anaemia may exist for long periods without being recognized. We believe that the human subject suffering from any pronounced degree of anaemia would be recognized, or would recognize himself, as being definitely out of health, though admittedly his illness might not be recognized as "pernicious anaemia." On the other hand, we have all seen large numbers of cases of pernicious anaemia which have reached either rapidly or slowly a high degree of oligocythaemia (one million or less red blood corpuscles per c.mm.), without any symptoms or signs of central nervous system disease being present.

In his present paper Dr. McGowan describes fowls with subacute combined degeneration of the cord, yet with little or no anaemia, and in past papers he has frequently reported cases of severely anaemic fowls with no central nervous system changes. These facts clearly show that there is no relation between the degree of anaemia and the degree of central nervous system degeneration, and are accordingly in direct opposition to his hypothesis.

The explanation of achlorhydria as a result of anoxaemia is also fraught with difficulty. Dr. McGowan claims that in anaemic pigs there occurs a lowering of the alkali reserve of the blood, accompanied by achlorhydria. That this may be so we do not doubt, but that anaemia *per se* is the cause of the achlorhydria in pernicious anaemia is contraindicated by the following facts. Many patients who later develop pernicious anaemia are definitely known to have been achlorhydric for a very long period—in some cases since childhood. Also, the percentage of children with achlorhydria born of pernicious anaemia parents is far higher than that among persons of their own age born of normal parents. This is also true of children born of parents suffering from subacute combined degeneration of the cord. Such patients in the prepernicious anaemia stage have a normal blood count, and in consequence it is difficult to understand on what basis Dr. McGowan can suggest that anoxaemia is present. It would appear remarkable that the anoxaemia which, in his view, must have been responsible for causing the achlorhydria should, although existing over such a prolonged period, have caused no damage to the central nervous system.

It was for the foregoing reasons, and particularly because of the absence of relationship between the degree of anaemia and the degree of central nervous system involvement, that we were forced to enlist the help of the constitutional element in explaining the disease. Moreover, we stated that we were fully aware of the danger of too readily invoking "diathesis" at the expense of experimental and clinical investigation as a means of explanation. Dr. McGowan states that if a constitutional predisposition can be held responsible for the lesions of the central nervous system in pernicious anaemia, it can logically be held responsible "for the sequelae and complications of each and every individual disease in which complications and sequelae are irregular in their occurrence." Far from disagreeing with this point of view, we would state that this seems the only logical explanation in many such cases. It is, in short, merely one way of stating the accepted doctrine of "the seed and the soil," and emphasizing the importance of natural immunity.

Dr. McGowan is to be congratulated on his careful researches into the blood and central nervous system changes occurring in fowls, which must prove extremely interesting and stimulating to all working on the subject of human pernicious anaemia. We feel, however, that to return to the "toxin" hypothesis of pernicious anaemia, especially when unsupported by any facts regarding the nature and source of the toxin, is to introduce further confusion into an already confused subject. Nor do we feel that Dr. McGowan's explanation of the tissue changes in the stomach and spinal cord, as being due to anoxaemia, is in keeping with the well-proven facts stated above.—I am, etc.,

STANLEY DAVIDSON, M.D., F.R.C.P.
Department of Medicine, University of Edinburgh, Aug. 13th.

SIR,—Dr. J. P. McGowan has described a disease occurring in the fowl in which anaemia and degenerative changes in the spinal cord occur. It is difficult to understand how, with no other evidence than his observations on seven fowls, he can reject the mass of evidence collected in the last ten years, which proves that achlorhydria is a predisposing cause of pernicious anaemia and subacute combined degeneration of the cord, and that neither the

achlorhydria nor the cord degeneration is a result of the anaemia. The frequent familial occurrences of achylia gastrica, pernicious anaemia, and combined degeneration of the cord, either separately or together, is also denied by him, apparently for no other reason than that in the absence of personal experience of the disease except in fowls, he has not paid attention to the extensive literature on the subject.—I am, etc.,

New Lodge Clinic, Windsor Forest, Aug. 14th. ARTHUR F. HURST.

ETIOLOGY OF PUERPERAL SEPSIS.

SIR,—Dr. Colebrook's paper in the *Journal* of July 26th (p. 134) resuscitates and confirms Schottmüller's well-known views on the occurrence of anaerobic streptococcal infection in puerperal fever. In Dr. Colebrook's opinion one-half at least of the cases of puerperal fever are to be attributed to these anaerobes. To the practising obstetrician it may well appear that yet another group has been added to the terrifying array of pathogenic streptococci. Dr. Colebrook's observations, however, are open to a different interpretation.

The outstanding clinical characteristic of the group of 18 cases described is thrombo-phlebitis of the pelvic veins. A notoriously dangerous procedure, intrauterine manipulation, is recorded in 10 out of 13 cases; clinical details are lacking in the remainder. The cases are not contagious. The anaerobic streptococci cultivated by Dr. Colebrook from the blood are mixed with other organisms in half the cases. Our personal experience of these anaerobic streptococci indicates that they are normal saprophytic inhabitants of the genital tract and are of low pathogenicity.

May it not be that the provocative factor is intrauterine manipulation, or trauma, and that the infection by various endogenous streptococci and other organisms is a sequel?

Are we not therefore considering the bacteriology of a familiar and troublesome clinical condition, long recognized by obstetricians as puerperal thrombo-phlebitis, rather than a new form of puerperal fever due to a distinct and, to this extent, specific group of streptococci?—We are, etc.,

R. R. ARMSTRONG.
H. BURT-WHITE.

London, E.C.1, Aug. 10th.

SIR,—Much is being published about puerperal sepsis and its causes, but it appears to me that one of its chief causes has been overlooked—namely, the unfitness of many of the young women of to-day for child-bearing. The dress worn by women nowadays is so scanty that their physical development is easily seen, and it is noticeable how many of them have the small pelvis characteristic of the male. Under this condition pregnancy with a small child in early days may be satisfactory, but later on, when full development has taken place and their joints have become more fixed, is it surprising that much injury is done to internal parts during parturition, and that septic developments result?

I am acquainted with the case of a young woman, suffering from congenital hip deformity, who became friendly with a young man; before deciding on an engagement she consulted a woman doctor, was examined, and told she could safely marry. I think this pre-marriage examination is of equal importance, in certain cases, with pre-natal examination, and that its practice would lessen the severe criticisms now being passed on doctors and nurses.—I am, etc.,

London, S.W.2, Aug. 11th. G. F. GUBBIN.

IDIOPATHIC HAEMORRHAGE IN THE NEWBORN.

SIR,—The interesting communication by Drs. J. M. Boyd and J. A. Elliot in the *Journal* of August 9th (p. 213) prompts me to draw attention to an article on haemorrhage in the newborn in *Modern Technique in Treatment* (vol. ii, p. 69), and to mention three cases of melaena neonatorum which I have seen. The first was in the post-mortem room of the Edinburgh Hospital for Sick Children, and the origin of the bleeding was found to be a small polypus on the mucosa of the duodenum, which had become partly separated at its base.

The other two cases occurred in general practice in September, 1927, and December, 1929. Both patients were girl babies, born naturally at full time and of healthy mothers, the one a three-para, the other a primipara, neither of whom lost much blood during and after the third stage of labour. The two children began to bleed about thirty hours after birth; in the second case there was haematemesis and slight bleeding from the cord stump as well as melaena. Both were treated within two hours of the appearance of the haemorrhage, both recovered, and are now quite healthy. In each instance 10 c.cm. of the mother's blood was injected subcutaneously in the mid-scapular region of the infant's back. In the first case an injection of calcium chloride was made into the buttock also, and 10 minims of 1 in 1,000 adrenaline chloride was given by the mouth, with the hope of its acting as a local styptic; in the second case no other treatment was given except the injection of whole blood, which was performed within the hour after the onset; the child never appeared exsanguinated. Warm, boiled water was given by the mouth; the babies were kept warm, and were moved as little as possible.—I am, etc.,

SIDNEY E. CROSKERY, M.D.

Tunbridge Wells, Aug. 9th.

SIR,—The memorandum of Drs. Boyd and Elliot calls to mind two such cases in my practice during the past twelve months.

The first infant passed fresh blood per anum on the second day, perhaps a teaspoonful in all. This was repeated on two or three successive days, but with the exhibition of sterile water and liquid paraffin for a day or two the condition cleared up. In the second case a 7-para was delivered of a boy easily and without intervention. On the second day a small quantity of blood was vomited; influenced by the first-mentioned case I treated the child on expectant lines, but with less happy results, for on the morning of the following day a copious haemoptysis occurred, completely saturating the bedding. An hour later the child was extremely pale, pulseless, and apparently moribund, so 3 c.cm. of normal horse serum was immediately given intramuscularly into the glutei, and the child was oiled from head to foot and placed near the fire. During the next two days tarry stools were passed; there was no further appearance of fresh blood. The amount of blood lost in this case was amazing: I estimate that little short of a pint was contained in the vomit and stools. To-day the child is almost of average weight, at the age of 6 months.

I may add that, as in the case of Drs. Boyd and Elliot, there appeared to be no history of haemophilia or purpura.—I am, etc.,

Methley, Aug. 14th. E. W. LONSDALE WHITE, M.B., Ch.B.

NASAL SINUSITIS AND GENERAL MEDICINE.

SIR,—In the review of Dr. Watson-Williams's recent book on nasal sinusitis and general medicine (*Journal*, July 26th, p. 143), exception is taken to the statement that a certain type of optic neuritis is cured by the removal of an infected gall-bladder, the old phrase "all my eye" being recalled in this connexion. If the author of the review is a rhinologist he is hardly competent to express an expert opinion upon this subject; if he is an eye specialist he should know better.

Many kinds of uveitis and optic neuritis are due to septic infection; such may have a focus in the nasal sinuses, at the root of a tooth, in a septic tonsil, or in the abdomen. I have seen cases due to a suppurating bunion, and to a collection of pus under an ingrowing toenail. *B. coli* bacilluria and infection of the prostate are not uncommon causes of infection. Each case of this nature calls for exhaustive examination, and when the usual seats of infection have been explored without success I take such patients into a hospital and subject them to a general examination. In not a few an *x*-ray examination of the gall-bladder has revealed a cholecystitis, and the gall-bladder has been removed; then, and not before, the eye condition has begun to improve. Only to-day I saw a patient who recovered from an optic neuritis after the removal of a chronically inflamed appendix. I had seen her previously, and knew that her optic discs were normal.

She then developed neuritis and, after all the usual examinations had been made with negative results, the appendix was removed.

The association of ocular inflammation with abdominal sepsis is recognized by every ophthalmologist of experience, and it is a matter of surprise that a reviewer of a valuable work by a surgeon of world-wide reputation should be so flippant. It is quite obvious that when Dr. Watson-Williams mentions "errors of refraction" he does not mean the optical abnormality, but the symptoms associated with such errors—asthenopia and headache. The relationship between asthenopic symptoms and sinus disease was the subject of a communication made by an American rhinologist to the Oxford Ophthalmological Congress in 1929; there is little doubt that the irritation of a septic nasal sinus can give rise to ocular symptoms quite apart from any actual disease of the eyes.—I am, etc.,

Birmingham, Aug. 8th. T. Harrison Butler.

DIATHERMY IN GYNAECOLOGY.

Sir,—I have pleasure in adding my testimony to that of Dr. J. Newton Dyson, whose letter on August 16th (p. 266) confirmed the statements made by Dr. Cumberbatch in the *Journal* of August 2nd (p. 194) concerning the pioneer work undertaken by himself and Dr. Robinson in the above connexion. I studied the methods of Drs. Cumberbatch and Robinson for two years under their direct guidance and supervision. I have since continued their principles in my own practice with complete success in cases of chronic gonorrhoea, in both women and men, to our mutual satisfaction and the abiding gratitude of the patients. My medical friends, however, smile indulgently and incredulously when I tell them that, speaking from my own experience, about 90 per cent. of cases can be cured by this means alone, and that, if employed with other methods, the percentage of cures is nearer 100.—I am, etc.,

London, W.2, Aug. 18th. R. Galway Murray.

THE PERFORMANCE OF NECROPSIES BY GENERAL PRACTITIONERS.

Sir,—I heartily agree with the comments of "Rusticus" in the *Journal* of August 9th (p. 228). I suggest that, in rural districts, each coroner should appoint two or three general practitioners to do all the post-mortem work, with the help, in each case, of the medical attendant. Those appointed would quickly gain sufficient experience to form reliable opinions about the cause of death, and the medical attendants would learn enough to take up the appointments when vacancies occurred.—I am, etc.,

August 10th. A Country Doctor.

Sir,—Having had twenty-five years' experience as a country practitioner, I entirely agree with the indictment by "Rusticus" (*Journal*, August 9th, p. 228) of the present obsolete and unsatisfactory conditions under which medical men practising in rural districts are expected by coroners to carry out post-mortem examinations. There is certainly, in my opinion, urgent need for reform in the present methods, which he so justly condemns.—I am, etc.,

August 11th. Country G.P.

Obituary.

CHARLES BROOK, F.R.C.S.,

Vice-President and Consulting Surgeon, Lincoln County Hospital.

We have to record with regret the death of Lieut.-Colonel Charles Brook, R.A.M.C.T., who died at his residence in Lincoln on August 10th, in his ninety-second year; he was one of the oldest medical men in the country. In a long and distinguished career he showed conspicuous ability both in civic and military spheres, and his death is profoundly mourned in Lincoln, where he was senior magistrate.

Charles Brook was born in Lincoln, and after studying for a year at the Lincoln County Hospital he entered St. Bartholomew's Hospital in 1858, where he won a scholarship and prizes for anatomy and clinical surgery; he obtained the diplomas M.R.C.S. and L.S.A. in 1861. He was then appointed house-surgeon at St. Bartholomew's, but resigned owing to the illness of his father, the late Dr. W. H. Brook, succeeding him in practice at Lincoln in 1862. Two years later he was appointed surgeon to the Lincoln County Hospital, and in 1900 he became consulting surgeon; he was elected vice-president of this institution in 1921. He was also chairman of the Lincoln Dispensary. In 1922 he was elected to the Fellowship of the Royal College of Surgeons of England as a distinguished member of twenty years' standing. His association with the Army dates from 1862, when he was commissioned assistant-surgeon to the Royal North Lincoln Militia, afterwards the 3rd Battalion of the 10th Foot (Lincoln) Regiment; he was promoted to surgeon-major in 1877, and retired in 1891. Although he was 75 at the outbreak of war in 1914 he was then appointed senior officer of the surgical staff of the 4th Northern General Hospital, retiring in May, 1918, with the rank of lieutenant-colonel.

Always an enthusiastic sportsman, Charles Brook excelled as a cricketer, a keen rider to hounds, and a good shot, able to tramp over the heather until nearly 80. He was chairman of the Lincoln Race Committee until 1926, racing himself at one time under the name of "Mr. Seabrook." His business instincts and organizing ability enabled him to render valuable services on the boards of several important local commercial organizations; and he was chairman for a time of the local Conservative Association. He was the senior city magistrate, having been appointed J.P. as long ago as 1888. For many years he was a member of the British Medical Association, being chairman of the Lincoln Division from 1924 to 1928. He is survived by a son and daughter, his wife and an elder son having predeceased him.

Lord Moynihan writes: I am so sorry to hear of dear old Charles Brook's death; he was a great figure and a fine type of cultured English gentleman, and there is surely nothing so fine as that.

Mr. George Robertson, F.R.C.S., who died at Bonar Bridge, Sutherlandshire, on August 2nd, was born at Dunfermline in 1879 and received his medical education in Edinburgh, where he obtained the diplomas L.R.C.P., L.R.C.S., and the L.R.F.P. and S.Glas. in 1900, after a distinguished career as a medical student, in which he won the Pattison bursary, the Bathgate gold medal, and the residents' prize for clinical surgery. After holding the post of resident surgeon in the gynaecological ward of the Royal Infirmary and in the Royal Maternity and Simpson Memorial Hospital, he returned to his native town and quickly built up a large practice, becoming a surgeon of considerable ability and skill. During the war Dr. Robertson served on the Eastern Front as a captain in the R.A.M.C. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1918, and was appointed surgeon to the Dunfermline and West Fife Hospital. He published numerous communications on surgical subjects. Dr. Robertson was on holiday at the time of his death, which was due to a heart affection. He is survived by a widow and a daughter.

Dr. Gerald Alfred Child of Hythe, Southampton, who died on August 11th, aged 59, was the only son of the late Rev. Alfred Child, rector of Upper Clatford, Hants. He was educated at the University of Oxford and St. Thomas's Hospital Medical School, and obtained the diplomas M.R.C.S. and L.R.C.P. in 1895. He was medical officer of the Beaulieu, Dibden, and Hythe district of the New Forest Union, and also of the Hythe and Dibden Cottage Hospital. He was joint designer of the Leslie and Child ambulance, which was adopted by the War Office and extensively used during the war. The distinction of O.B.E. was conferred on him for his services, which included supervision of the work of the Hampshire Automobile Club Ambulance, which had the fine record of travelling 605,800 miles and removing 211,400 cases from hospital ships in Southampton Docks. He was also surgeon-in-charge of the West Cliff War Hospital throughout the period of hostilities. Dr. Child was a member of the Southampton Division of the British Medical Association.

Colonel JOHN SOUTHEY BOSTOCK, C.B.E., late R.A.M.C., Commandant of the Royal Army Medical College, Millbank, died suddenly at The Priory, Burford, Oxon., on August 12th, aged 55. He was born on June 5th, 1875, the eldest son of Dr. E. I. Bostock, whose six sons all served in the war, three of them being killed. John Bostock was educated at Lancing and at Edinburgh University, where he graduated M.B., Ch.B. in 1900. Entering the R.A.M.C. as lieutenant on January 29th, 1901, he became major in 1912, brevet lieutenant-colonel in 1915, and brevet colonel on January 1st, 1918. He served throughout the war of 1914, having accompanied the original Expeditionary Force, and sharing in the retreat from Mons. He was mentioned in dispatches in the *London Gazette* of June 23rd, 1915. At a later date towards the end of the war he was in command of the great war hospital at Eastbourne, and was then Director of Medical Services at the Ministry of Pensions from 1919 to 1923, when he was appointed principal medical officer at Hong-Kong. Six months ago he succeeded Major-General Douglas, V.C., as commandant of the R.A.M.C. College, Millbank. He was awarded the C.B.E. in 1923. In 1909 he married Olivia Emslie, daughter of Mr. Emslie J. Horniman of Chelsea, and had two sons and one daughter. He was throughout his service a most popular officer, alike among his contemporaries and with those who were junior to him. A junior R.A.M.C. officer who had served under him contributes the following appreciation: "John Bostock," for that was how he was known among us all, was a man with exceptional charm. Wherever he went he created an atmosphere of geniality and friendship. Whether as depot commandant in relation to recruit or as senior officer to senior officer, "John Bostock" could always make his personality felt. Almost at the zenith of his career he has been called away. His selection for the post of commandant of the R.A.M.C. College was considered a really happy one; here was the ideal man for the position. He could make the newcomer welcome as no other man could, and could represent the Corps to its distinguished visitors with a natural warmth and elegance. There must be few among his brother officers who do not feel the loss, not only as a really personal one, but also to the Corps as a whole.

Universities and Colleges.

UNIVERSITY OF LONDON.

DR. E. GRAHAM LITTLE, M.P., has been re-elected chairman of the Council for External Students of the University of London for 1930–31.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

THE undermentioned scholarships have been awarded for 1930:

University Scholarship (£100): H. F. Moseley. Hector Mackenzie Exhibition (£25): I. H. Gosset. Entrance Scholarship in Arts (£50): R. R. McSwiney and A. J. Belsey. Entrance Scholarships in Science (£150 and £30): (1) G. W. Hearn; (2) W. E. Hadden and J. I. Lesh. William Tite Scholarship (£25): L. E. Jones.

Medical News.

THE second annual dinner of the Chartered Society of Massage and Medical Gymnastics will be held at the Midland Hotel, Manchester, on Friday, October 3rd, at 7.30 p.m. Further information may be obtained from the secretary of the society, Tavistock House (North), Tavistock Square, London, W.C.1.

NOTICES of the triennial dinner of the Manchester Royal Infirmary Old Residents' Club on October 25th have recently been circulated. Any old residents at the Infirmary who have not received them are asked to communicate with the secretary of the club at the Royal Infirmary, Manchester.

AN introductory course on psychological medicine for the general practitioner will be given at the Tavistock Square Clinic for Functional Nervous Disorders, 51, Tavistock Square, W.C.1, on Wednesday afternoons, beginning on October 1st, and continuing until December 17th. Dr. E. Graham Howe and Dr. H. Crichton Miller will each deliver twelve lectures, and the fee for either series is £1 11s. 6d.; the fee for taking both series is two guineas. Tickets for the course can be obtained by application to the honorary lecture secretary at the clinic.

THE Fellowship of Medicine announces that from September 1st to 13th there will be an all-day clinical course at the Queen's Hospital for Children. An all-day revision course at the Westminster Hospital from September 15th to 27th will comprise instruction in all departments of medicine, surgery, and the specialties; visits will be paid to two mental institutions connected with the hospital. There will be a further revision course at the Metropolitan Hospital (especially designed for panel practitioners) from September 29th to October 11th; a course in diseases of the throat, nose, and ear at the Central London Throat, Nose and Ear Hospital from October 6th to November 1st; one in tropical medicine at the Tropical Diseases Hospital from October 7th to 30th; and one in gynaecology at the Chelsea Hospital from October 13th to 25th. Evening courses will also be arranged in that month for the M.R.C.P. and the final Fellowship examinations. Full particulars of the post-graduate work arranged by the Fellowship of Medicine, and the 1931 list of special courses, may be obtained from the secretary, 1, Wimpole Street, W.1.

A POST-GRADUATE course in diseases of the heart and blood vessels will be held from October 13th to 25th, at the Broussais Hospital, 96, Rue Didot, Paris, under the direction of Dr. C. Laubry. Clinical and radiological demonstrations will be arranged as well as formal lectures, and a certificate will be issued at the end of the course. The fee for the course is 150 francs. Further information may be obtained from Dr. Y. Mevel at the hospital.

THE German Neurological Society will hold its annual meeting at Dresden on September 18th, when the principal subject for discussion will be the theory and practice of the problem of resistance in nervous diseases, introduced by Drs. Boeke of Utrecht, Spatz of Munich, Foerster of Breslau, and Goldstein of Berlin.

IT is announced that the fourth Congress of the World League for Sexual Reform on a Scientific Basis has been postponed for three days, and will now be held in Vienna from September 16th to 23rd. The subjects for discussion include: sexual difficulties of the young, of adults, and of mentally abnormal persons; the internal secretions; the relation of sexual abnormalities to the administration of justice; birth control; and the rights of children. Further information may be obtained from the secretary of the congress at the Congress Bureau, Postfach 63, Vienna 1/15.

THE second Congress of the Federation of the Latin Medical Press will be held at Brussels from September 28th to 30th in connexion with the centenary celebration of Belgian independence. Topics of discussion include the medical journal and contemporary medical journalism, the rights of editors, the production of a dictionary of medical terms, and the part played by the medical press in diffusing important scientific and professional views. Further information may be obtained from Dr. R. Beckers, general secretary of the conference, 36, Rue Archimède, Brussels.

THE thirty-ninth French Congress of Surgery will be held in Paris under the presidency of Dr. Maurice Auvray, surgeon to the Hôpital Laennec, from October 6th to 11th, when the following subjects will be discussed: chronic pancreatitis, introduced by Pierre Brocq of Paris and Miginine of Toulouse; traumatic spondylitis (Kümmel-Verneuil disease), introduced by Frœlich of Nancy and Albert Mouchet of Paris; and preparation of patients for operation, introduced by Lombret of Lille and Sauvé of Paris. Further information can be obtained from the general secretary, Rue de Seine 12, Paris, VI^e^.

AN address entitled "Diet and dental disease: What we have learned from animal experiments," delivered by Mrs. Edward Mellanby as the Fourth Stephen Paget Memorial Lecture before the Research Defence Society on June 3rd, is published in full in the current issue of *The Fight against Disease*, the quarterly journal of the society. An abstract of this address appeared in the *British Medical Journal* of June 14th (p. 1101).

THE sixth annual report of the National Institute for the Deaf, which was presented to the annual meeting of the society last May, has now been printed, and may be obtained from the offices of the institute, 2, Bloomsbury Street, W.C.1. A reference to the annual meeting appeared in our columns on June 7th (p. 1070).

DR. THEODOR AXENFELD, professor of ophthalmology at Freiburg, and Hofrat Ernst Fuchs, professor of ophthalmology at Vienna, have been elected honorary members of the Japanese Ophthalmological Society.

THE following appointments have recently been made in French faculties of medicine: M. Maillard, professor of biological and medical chemistry; M. Wunschendorff, professor of pharmacological chemistry and toxicology at Algiers; and M. Leulier, professor of pharmacy and pharmacology at Lille.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

DERMATITIS HERPETIFORMIS.

"F. H. R.," replying to Dr. J. E. Richmond (August 2nd, p. 200), writes: Permanent change of locality may cure, but relapses can occur if only a holiday or stay in hospital is taken. Cure has been reported from vaccines prepared from the vesicles; vaccines made from any abnormal intestinal bacteria or from any existent infective focus may help. A diet of milk and water only in an acute attack, if persevered with, has been known to cause the disease to disappear. Great benefit may result from thyroid extract, insulin, alkaline diuretic mixtures, and hexamine; ultra-violet ray treatment, general galvanization, and auto-serotherapy are also worth trial. There is no certain cure, but the measures mentioned have sometimes been successful. General treatment should aim at combating the decided neurotic and toxic forces present in this disease.

SOUR MILK.

DR. W. CAMPBELL MACKIE (Wigan), replying to "E. W. D.," suggests the use of Grade A milk acidified with lacteol tablets, which must be kept carefully corked in their tubes. Three or four are soaked and placed in a tablespoonful of the milk; they are then crushed, intimately mixed with it, and the mixture then transferred to one or two pints of milk. This is well stirred, and left at room temperature during the summer, or in winter kept at body temperature. The milk is soured in six to eight hours, and is then ready for use. Dr. Campbell Mackie advises also the administration of a preparation—"colactin"—marketed by E. H. Spicer, Watford, Herts, since this aids the establishment of *B. bulgaricus* in the large intestine.

DR. C. G. SALVESEN (Tarland, Aberdeenshire) writes: In reply to "E. W. D.," who asks for advice regarding the artificial souring of milk in the *Journal* of August 9th (p. 236), I may state that this form of milk is very extensively used in the Scandinavian countries as a daily food, and is prepared as follows. The bottom of a deep plate or bowl is smeared with a teaspoonful of sour milk or cream; the dish is then filled with fresh milk and allowed to stand for 24 to 36 hours in a warm place, such as a kitchen cupboard, but not on a range. When ready a thick cream should have formed, and the milk below should be fairly firm. Eaten with a sprinkling of brown sugar and cornflakes or grape-nuts it is a delightful summer food, but is in most cases an acquired taste. A little of the top cream should be used for preparing the next supply.

"R. G." recommends the following procedure: Squeeze into a teacup the juice of half a lemon, and add to this half a teacup of warm boiled milk (blood heat) with a nut of butter. Keep in a warm place. The mixture ought to "set" in twenty-four hours. A tablespoonful of this, stirred into half a pint of hot milk and kept in a warm place, gives the supply for the next day, and so on.

ANOTHER CORRESPONDENT writes to recommend "yaghourt," which may be purchased from Boudja Manoli, 22, Great Chapel Street, Soho. The sour milk is prepared from this, and information about the method may be obtained from the suppliers.

TREATMENT OF DYSMENORRHOEA.

DR. BLANCHE HENDERSON (West Hartlepool), replying to Dr. Murray's inquiry (August 16th, p. 272), writes: I am inclined to think much might be done by encouraging the patient to believe that the pain will lessen if she will be very persevering with the following treatment: sedobrol daily, with veramon p.r.n.; also laxatives, a tonic, and postural exercises, such as raising the pelvis above the level of the thorax. If possible, the patient should remain in bed, with a hot bottle the first day. She should be encouraged to try to get her mind off the condition and to occupy herself fully.

INCOME TAX.

Expense of Purchasing a Practice.

"W. S." bought a practice in 1929 and thereby incurred certain legal and other costs as well as the expense of removing from non-professional to professional premises. Is any allowance due in respect of these expenses?

*** No; they represent the cost of acquiring and starting his practice rather than expenses incurred in carrying on the work. On the analogy of other decided cases, "W. S." has no legal claim to deduct these expenses.

LETTERS, NOTES, ETC.

HOLIDAYS FOR FACTORY GIRLS.

WE have received the following letter, signed on behalf of the Factory Girls' Country Holiday Fund by the Countess of Sandwich, Dame Mary Scharlieb, Miss Lilian Braithwaite, Sir Thomas Barlow, the Bishop of London, the Chief Rabbi, the Rev. R. F. Horton, and Mr. J. F. Green: May we again ask for your friendly co-operation in our efforts to help women workers in factories, workshops, and domestic service to obtain a restful and much-needed holiday away from the congested and noisy areas of industrial centres? It is a principle of the Factory Girls' Country Holiday Fund to ask the girls and women themselves to contribute to the expense of their holiday to the best of their ability; but if they were dependent entirely upon their own savings, necessarily small, the holiday would be quite out of the question. Through your columns we beg leave to ask the public, which has not failed us in the past, to help again those who cannot adequately help themselves. The benefit derived by these women and girls, who after a strenuous day go home to stuffy streets and crowded dwellings, is almost incalculable. The holiday means change of air, change of scene, change of interests. It infuses those who enjoy it with new life; it inspires them with new hope; it invigorates the body and refreshes the mind. The scene presented week after week at the headquarters by a crowd of tired but eager and excited girls and women ready to start off on a holiday, or by another crowd returning home, the picture of health and happiness, demonstrates the immensity of the benefits received. Those who watch it are filled with gratitude to subscribers to the Fund who by their magnanimity and generosity help to make such holidays possible. Subscriptions and donations will be thankfully received and acknowledged by the honorary treasurer, Mrs. Slater, or by Miss Cauney, 75, Lamb's Conduit Street, London, W.C.1.

FOREIGN BODY IN THE VAGINA.

MR. IAN FRASER (Belfast) recalls the case of the insertion of a hairpin into a child's vagina (July 26th, p. 168), and reports the case of an unmarried girl, aged 19, who had a fetid and blood-stained vaginal discharge. He writes: Examination revealed a wooden object impacted in and ulcerating the walls of the vagina. It was so firmly implanted that her doctor was unable to move it; with difficulty I was able to get between the softened vaginal wall and the wooden object and extract it. It turned out to be a boy's penny top, which she had put in pointed end foremost ten days previously. Her story was that it was an accident—in fact, she had sat on it in bed!

SEVERE CEREBRAL SYMPTOMS FOLLOWING SPIROCID ADMINISTRATION.

WITH regard to an abstract in the *Journal* of August 16th (*Epitome*, para. 146) entitled "Severe cerebral symptoms following stovarsol administration," we have received a communication from Messrs. May and Baker, Ltd. (Battersea), pointing out that it is apparent that spirocid and not stovarsol was the preparation used in the case recorded. They add: stovarsol is a registered trade mark belonging to ourselves.

ERRATA.

WE much regret that in the *Journal* of July 26th (p. 135) a line was omitted from the article by Dr. Leonard Colebrook entitled "Infection by anaerobic streptococci in puerperal fever." The last sentence of the paragraph on this page describing the clinical features of seventeen cases of generalized infection due to anaerobic streptococci should have been as follows: It may be noted that 5 of the 9 cases which developed suppuration gave mixed cultures from the blood, and in 3 of them a septic thrombus was found post mortem.

PROFESSOR HENRY MOORE calls our attention to the fact that in the first line of his article on lipoid nephrosis in the *Journal* of August 16th (p. 242), the name Friedrich was mis-spelt as Friederick.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 36, 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *123*.

NATURALLY RICH IN VITAMIN "D"

A "RESURRECTION"

.....

.....GUILDFORD
30/6/30

"Baby Hook, came under my care shortly after birth suffering with marasmus following whooping cough. Broncho-pneumonia developed and was with great difficulty cleared up, leaving the child in a very low condition. Feeding proved a difficult problem, several things were tried without beneficial results. The results with Cow & Gate were truly wonderful, indeed it is a case of 'a resurrection.'"

(Signed).....M.B.Ch.B.

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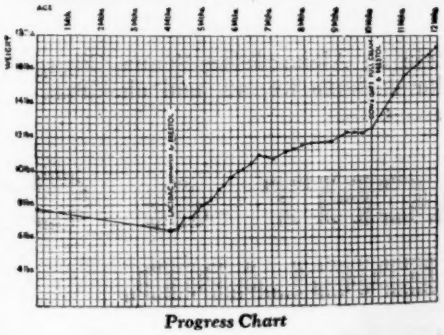
BEFORE—4 months' old, 6 lbs. 9 ozs. in weight.



Progress Chart

AFTER—10 months' old, 12 lbs. 6 ozs. in weight.

June 1930. Baby Hook has now won a prize in a Baby Competition!

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A palatable and very concentrated aromatic preparation of the finest Cascara Sagrada; free from bitterness and griping action. Dose: Quarter to one drachm.

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An excellent fruit laxative syrup, containing Alexandrian Senna, Figs, Prunes, Tamarinds, etc. Eminently suitable for delicate women and children. Dose: Half to two drachms, according to age.

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